THE EUMORFOPOULOS COLLECTION

W. PERCEVAL YETTS

THE GEORGE EUMORFOPOULOS COLLECTION

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THE GEORGE EUMORFOPOULOS COLLECTION

CATALOGUE

OF THE CHINESE & COREAN BRONZES, SCULPTURE, JADES, JEWELLERY AND MISCELLANEOUS OBJECTS

By W. PERCEVAL YETTS



Volume One

BRONZES: RITUAL AND OTHER VESSELS, WEAPONS, ETC.

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Of THE CATALOGUE OF THE CHINESE AND COREAN BRONZES, SCULPTURE, JADES, JEWELLERY AND MISCELLANEOUS OBJECTS IN THE GEORGE EUMORFOPOULOS COLLECTION 560 *copies only (numbered* 1 *to* 560*) have been printed on Van Gelder mould-made paper, of which* 520 *copies are for sale. In addition* 30 *copies (numbered I to XXX) have been printed on Batchelor's Kelmscott handmade paper, of which* 25 *copies are for sale.*

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FOREWORD

I PROPOSE to confine myself in the main to indicating briefly when and under what circumstances the various sections of my collection to be described by Mr. W. Perceval Yetts began to be formed.

In the preface to the Catalogue of my Pottery collection I pointed out how recent was our knowledge of the pre-Ming Ceramic wares, although amongst these a distinction has to be made between the Sung and the earlier potteries. For while few specimens of the former had reached the West prior to this century they had always been eagerly collected and discussed by Chinese connoisseurs. The earlier wares, on the other hand, were until the opening up of the tombs very little known even to the Chinese, and the literary references to them are vague and uninforming.

The position as far as regards early bronzes—by early I mean Han and pre-Han—was analogous to that of the Sung ceramic wares.

Such bronzes—especially if inscribed—had always been ranked amongst the most prized possessions of Chinese collectors, and there is in existence a considerable native literature dealing with them. In the West, however, they were until recently very little understood, T'ang, Sung, and later reproductions being often mistaken for Chou originals. I do not mean to say that genuine examples were entirely non-existent in Western collections, but such pieces were rare and their importance in relation to archaistic reproductions of later date was not recognized.

It should also be added that as far as regards the Far East the appreciation of early Bronzes was not confined to China. Foremost amongst Japanese collectors, the late Baron Sumitomo succeeded in bringing together a collection which, it is safe to say, can never again be equalled. The sumptuous many-volumed catalogue—a copy of which I owe to the kindness of the late Baron and of his son, the present Baron—is, even to those like myself who have not had the good fortune to see the collection itself, a revelation of what Chinese bronzes can be.

Under these circumstances—keen appreciation, that is to say, in the Far East, imperfect knowledge in the West—it is not surprising that few really fine bronzes were finding their way to Europe.

The first bronze of really first-rate importance which I recollect seeing offered in London is the fine *yu* reproduced on PLATES XVIII and XIX. It came into the market a little before the war. The price asked was a high one—it then appeared an excessive one—and as a matter of fact it ran into four figures. There was considerable hesitation amongst the few collectors there were then of such things, and even they were far from being educated up to such a standard of values.

At last the late Mr. William Cleverly Alexander made up his mind and acquired it, as a result, I believe, of a " deal " in which a famille-noire vase he had been holding for some time played an important part. It speaks volumes for Mr. Alexander's courage and flair that he decided to part with what had always been regarded as " gilt-edged security " in the collecting world for something the true value of which had not yet been properly appraised. But Mr. Alexander was a courageous collector and trusted his own judgment rather than expert advice.

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Two or three years after his lamented death I was very glad to be offered the opportunity of adding it to my collection—at a considerably enhanced price, be it said.

A few years previous to this I had acquired the well-known owl (PLATE XI). This was the first important bronze to enter my collection.

After the close of the war fine early bronzes were seen more frequently. Many of these were from recent excavations, but a few came from Chinese collections, the magnet which was now drawing them out being rising prices due to growing appreciation. The majority of these bronzes found their way to the States, but a few remained in England.

Of my purchases at this date I need only mention the imposing double-ram bronze (PLATES VIII and IX) and the rare painted *lien* (PLATES LIII and LIV). In 1922 I acquired the four-handled *tui* (PLATES XIII and XIV).

Perhaps I may be allowed to dwell a moment on this bronze, although in doing so I am wandering beyond the limits I set myself at the outset of this foreword. I do so because I think it has features which render it of particular interest.

One is impressed first by the massive grandeur of the form, then by the way the ornament, which is in the so-called Chou style fully developed, is disposed over the surface, and finally one notices the technical excellence of the casting. One feels that here the Chinese bronze worker is at his best and that behind this bronze there must be a centuries-old tradition of bronze-casting.

On the inside there is a long inscription in archaic script, the correct translation of which presents considerable difficulty and is not free from doubt, but I think it can safely be inferred that the effect of the inscription is to date the bronze early in the Chou dynasty.

We are thus inevitably led to the conclusion that the so-called " Chou " style has its roots in the Shang-Yin and most probably combines elements deriving from still earlier date. This would be in accord with Chinese tradition, which has always claimed a high antiquity for the origin of the bronzes.

Simultaneously with these larger bronzes a large number of small bronzes were coming over in the shape of mirrors, weapons, harness, and chariot furniture, Buddhist figures and other ritual objects, buckles, toilet implements, etc. They range in date from pre-Han to the T'ang and Sung dynasties and many are inlaid or gilt and of fine workmanship.

Some two years or so before the war I saw and purchased my first piece of T'ang silver—the exquisitely worked tazza-shaped cup shown at the Burlington Fine Arts Club Exhibition of 1915 and reproduced on PLATE XV of the catalogue of that exhibition. It still remains one of my choicest pieces of T'ang silver and will be here described and reproduced in Volume VI. After the war silver and gold objects and jewellery—chiefly from fresh excavations—were seen in increasing numbers. I need scarcely mention how excited and interested we were when we first saw objects recalling those to be seen in the Sho-so-in.

Much about the same time as this silver cup I acquired my first piece of Chinese glass—the bluish-green medallion or button shown at the same exhibition (PLATE LIV of the catalogue), also to appear here in Volume VI. For a few years it remained my solitary example of early Chinese glass, but later on a fair number of glass objects were found and I have been able to form a small collection of them.

Perhaps the most interesting of the objects discovered on the earlier sites are the carved bones and the tomb jades. I confess that prior to the publication of Dr. Berthold Laufer's book " Jade " in 1912, I was ignorant of the existence of these jades.

FOREWORD

Here in Europe it was to Paris that the first specimens of these early jades were brought, and Dr. Gieseler, at once recognizing their importance, began forming his collection. Being first in the field he was able to secure some very remarkable specimens.

An exhibition of these jades was held at the Cernuschi Museum in 1913, but at that time the same confusion existed in respect of these jades as existed in the case of bronzes—that is, archaistic examples of later date were confused with genuinely early ones. The exhibition nevertheless was an interesting and instructive one and succeeded in arousing attention and discussion.

It was whilst in Paris to see this exhibition that I bought my first early jade—the disk (*pi*) shown at the Burlington Fine Arts Club Exhibition of 1915 (PLATE LI of the catalogue) and to appear in Volume V of this catalogue. It was said to have been found together with the bronze halberd blade inlaid with turquoise reproduced on PLATE LXIX of this volume. Although there is no actual proof there is nothing inherently improbable in this statement. Both pieces came over together from China and both are clearly of early date.

The private collector is at a disadvantage in collecting large pieces of sculpture. Housing room is a difficult, if not insoluble, problem, and I am afraid that this section of my collection is not as representative as I could wish. Through the lack of funds at the disposal of our Museums most of the finest pieces that have come over these last twenty years have found their way to the States, although Paris has secured some good examples.

Within the last few years the discoveries of the Japanese in Corea, of Colonel Kozlóv in Mongolia, and of Sir Aurel Stein in Western China have shown that excellent lacquer was made certainly as early as the Han dynasty. But pieces of this date are not yet procurable by private collectors, and a speci men of Han lacquer is still a desideratum in my collection. I have, however, been able to acquire one or two small pieces of T'ang and Sung date.

I cannot close this rather discursive and imperfect survey without a passing reference to the discoveries of Professor J. G. Andersson, first published in 1923, which have revealed to us the existence of a neolithic culture behind the known Chinese civilization going back possibly to the fourth millenium B.C. Enough, however, has been said to show how fruitful and momentous the last quarter of a century has been for our knowledge of and how fundamentally it has changed our outlook on Chinese Art and Culture. Many new questions and problems—some of them difficult but all of the utmost interest—have been raised and now await solution. Whilst objects continually presenting features of a novel character kept coming in in rapid succession was scarcely the time to attempt the solution of these questions. The first thing that had to be done was to bring together the material. Considerable material has now been collected in the Far East, in Europe, and in America, and is available for purposes of study and comparison; but much that is still obscure would be elucidated by systematic excavation, and this is what above all is needed now. With some of the questions involved Mr. Yetts will, I hope, attempt to deal and none will deny his competence for the task.

G. EUMORFOPOULOS.

LONDON
December 1928.

PREFACE

THE task of dealing with that section of the Eumorfopoulos Collection which yet remains to be catalogued is beset with problems. First is the choice of a classification. Whatever method be followed in grouping thousands of objects, differing widely as to material, date, style, and purpose, into the compass of six volumes, criticism seems inevitable; since no single ruling principle can satisfy every consideration. To take one example: many things fashioned in bronze or jade have plastic qualities which raise them to the rank of sculpture; yet established custom ordains that bronze and jade be treated as separate entities. The claims of chronological sequence or style of design are strong; but against the adoption of either as the basis of arrangement is the undeniable argument that existing criteria are too scanty and uncertain to serve for guidance. We may reasonably expect that before long the results of scientific excavation in China will necessitate revision of many accepted notions, and that advances in comparative archaeology will make clear the channels of many cultural contacts hitherto but guessed. The discoveries of explorers—Andersson, Kozlóv, Le Coq, Pelliot, and Stein—have opened our eyes to the possibilities of the future, and we have before us in the works of Laufer a brilliant demonstration of what may be done when Western modes of research are brought to bear on problems of Chinese archaeology.

These are reasons why the cataloguer of to-day should proceed warily and avoid the reiteration of old standards and the setting up of new which alike may prove fallacious. Accordingly, in this and the ensuing five volumes some time-honoured methods of classification are set aside, and compromises are adopted which seem least likely to provoke condemnation in the light of future discovery. No attribution of date is made without reservation unless ample evidence sustains it, as, for instance, in respect of many types established as Han through the excavations carried out in Corea by Sekino and other Japanese archaeologists. While maintaining a cautious attitude towards writings inspired by unscientific speculation, I am fully alive to the importance of consulting native literature as the first step to any serious study of Chinese culture. With this aim I have attempted to gather together all the standard works relevant to subjects here treated, and to quote them whenever they bear directly on the matter in hand. Besides serving as an acknowledgment of my indebtedness, the Bibliography may, I hope, be helpful to other students. Perhaps lack of such a list in a European language may be taken to warrant the space it occupies; and, if its usefulness prove in some degree proportionate to the time and labour expended in collecting the books and compiling their particulars, no apology is needed. References to it throughout the text are made by quoting the numerals (printed in distinctive type) which precede the respective items.

In the descriptive text attention is confined to features not fully apparent in the plates; for surely wordy particulars are redundant concerning objects adequately portrayed. Nor is attempt made to reproduce the symbolic interpretations imagined by Sung writers, and repeated by many since, to account for decorative motives, the clues to which long before had been lost.

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The essay on inscriptions fills a large part of this volume; some may think too large for so obscure and remote a subject. Yet an understanding of inscriptions is inseparable from a serious study of bronzes, and the presence in the Collection of many representative examples, coupled with the fact that hitherto Western writers have paid scant attention to archaic script, seem to call for a general survey in addition to explanations of actual inscriptions in the Collection. The carrying out of this difficult task has been aided by the constant encouragement and guidance of Mr. L. C. Hopkins, and my frequent references to his writings only partly measure how much I owe him. Through the kind offices of Professor K. Kuroita, most valuable notes on the decipherment and translation of the long and perplexing inscription reproduced in Fig. 32 were sent to me by Mr. Takata Tadasuke. My special gratitude is due to him and also to Mr. Liu Pao-tz'ŭ, of Tientsin, who rendered me a like service, at the request of Mr. P. M. H. Osborne. Mr. Li Yung-ch'üan spent many days exploring with me the pages of Mr. Takata's monumental encyclopaedia of archaic script; and I am under obligations also to Miss E. D. Edwards, who was good enough to copy out the Chinese text of the Bibliography at a time when I had lost the use of my hand. From Professor Otto Kümmel I received a welcome contribution (**74**) to the Bibliography, and my thanks are due also to those who materially helped this work by obtaining books for me in China: Dr. Herbert Chatley, Mrs. Couling, Mr. E. Butts Howell, Dr. Evan Morgan, and Mr. P. M. H. Osborne. To Dr. Florence Ayscough I am indebted for the inked-squeeze which enables me to include a specimen (Fig. 8) of the script on the Stone Drums.

On questions of technique I have profited much from talks with Mr. H. A. Forbes, Mr. F. Lutiger, and Mr. H. Stabler. The first was my teacher in the casting of bronze, and to him I owe practical knowledge of the craft. The wide experience of both Mr. Lutiger and Mr. Stabler concerning technical processes and their application in various departments of art has helped me greatly towards an understanding of Chinese craftsmanship.

Finally, mention should be made of the means here used to reproduce inscriptions. Much may be said in favour of giving photographic facsimiles of inked-squeezes, but even they, when compared with the originals, often are found wanting. Moreover, the scope of this work precludes the assignment of extra collotype plates to the inscriptions, which therefore have to be presented through the medium of line blocks printed with the text. Accordingly, I devised a method of using this means without loss of accuracy. On an enlarged photograph of the inked-squeeze the inscription is traced in waterproof ink, while the bronze itself (if available) stands alongside for constant reference. The photograph is then bleached, and the inscription again compared with the original and corrected before it is sent to the block-maker. Sometimes I find that a better result is obtainable by rubbing chalk into the inscription, which is then photographed. This is the method followed in Fig. 33. The faithfulness of such reproductions depends, of course, on the personal factor; but I venture to maintain that, if due care and discrimination be exercised, the results are more informative than inked-squeezes. At any rate, the inscriptions are thereby shown black on white, as they should be; and they are certainly nearer the truth than those reproduced in native works before the days of photography. All which appear in this volume I have done by the methods described above, and I can vouch for their accuracy.

W. P. Y.

December, 1928.

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CHINESE DYNASTIC PERIODS

The Three Dynasties:		
	Hsia (legendary)	
	Shang-Yin	? 1766-? 1122 B.C.
	Chou	? 1122-249 B.C.
Ch'in		221-206 B.C.
Former (Western) Han		206 B.C.—A.D. 25
Later (Eastern) Han		A.D. 25-220
The Three Kingdoms (220-280); Six Dynasties (220-589); Southern and Northern Dynasties (386-589); and Five Dynasties (420-618):		
	Wei	220-264
	Shu Han	221-264
	Wu	222-280
	Western Chin	265-316
	Eastern Chin	317-419
Southern	Liu Sung	420-478
Southern	Southern Ch'i	479-501
Southern	Liang	502-556
Southern	Ch'ên	557-589
Northern	Northern (Yüan) Wei	386-535
Northern	Eastern Wei	534-550
Northern	Western Wei	535-557
Northern	Northern Ch'i	550-577
Northern	Northern Chou	557-581
Sui		581-618
T'ang		618-906
The Five Dynasties:		
	Later Liang	907-923
	Later T'ang	923-936
	Later Chin	936-946
	Later Han	947-950
	Later Chou	951-960
Tartar Dynasties:		
	Ch'i-tan (Liao, after 947)	907-1125
	Western Liao	1124-1201
	Chin	1115-1235
	Western Hsia	1032-1227
Northern Sung		960-1127
Southern Sung		1127-1279
Yüan		1260-1368
Ming		1368-1644
Ch'ing		1644-1912

INSCRIPTIONS ON BRONZES

EIGHTEEN centuries ago there appeared a dictionary which beyond doubt has been consulted more often than any other. Its title, *Shuo wên chieh tzŭ*, means " An Explanation of Ancient Figures and an Analysis of Compound Characters." The author was a retired official, Hsü Shên, who had previously written a treatise on variations in the texts of canonical works extant after the Burning of the Books at the end of the third century B.C. Mainly in furtherance of his aim to correct textual corruption and explain forgotten terms in these literary foundations of the national culture he compiled this dictionary of nearly 9,400 characters, arranged under 540 classifiers. He was chiefly concerned with the forms of characters and their origins, though he added brief explanations of the meanings. His sources were the surviving classics, the writings of his predecessors, and inscriptions on bronze and stone. Data from the last-mentioned source, notably from bronzes, have since multiplied exceedingly as the result of excavation and chance discovery; and Hsü Shên did not index even all the characters current in his day. These facts and the extreme reverence in which Chinese scholars hold their ancient script have moved many during the last eighteen hundred years to edit, revise, and amplify the *Shuo wên* (as it is called for brevity). Only three representative editions are included in the accompanying bibliography (**37**, **72**, and **154**). The *Shuo wên* has always been regarded as the basis for study of ancient script, and it has lost little of its authority to the present day, in spite of the recent discoveries, to be mentioned later, and the progress of epigraphic studies.

Whatever the defects of the *Shuo wên*, it represents opinions generally held in A.D. 121, the date when the author's son put finishing touches to the work after his father's death, and presented it with a memorial to the Throne. Its Preface describes the methods of compilation, and gives an interesting account of current notions concerning the evolution of writing. It traces the invention of script to the three chief culture-heroes of the race, the mythical emperors Fu-hsi, Shên-nung, and Huang Ti, who are supposed to have reigned nearly three thousand years B.C. The first devised the Eight Trigrams, the second a method of records by knotted cords, and the third directed his minister Ts'ang-hsieh to note the tracks of birds and beasts in the sand so that they might be used as guides for shaping written signs. From the observations of Ts'ang-hsieh originated the *ku wên*, or Ancient Figures, which served for Chinese writing during the subsequent two millennia till a Grand Annalist, named Chou, made known the so-called " Great Seal " (*ta chuan*) characters. Some of these are said to have resembled the Ancient Figures, while some were new. They were embodied by Chou in a book known as the *Shih Chou p'ien*. The next stage occurred about 220 B.C., some six centuries later, when at the command of the First Ch'in Emperor three officials compiled treatises for the purpose of introducing as the standard a somewhat simplified form called " Small Seal " (*hsiao chuan*). Of these three, the Prime Minister Li Ssŭ is the best known (*v. inf.*, p. 13). The Preface ascribes the " Small Seal " also to Ch'êng Miao. Then a still simpler script, called *li shu*, was adopted to facilitate the drafting of documents relating to the multitude of prisoners at that time. Later tradition couples this invention with the name of Ch'êng Miao, who is said thereby to have won release and office after long captivity. Upon *li shu* are based the characters used to the present day.

Such is the history of Chinese writing as outlined in the Preface to the *Shuo wên*, and it has been generally accepted during the eighteen centuries since Hsü Shên wrote his famous dictionary. No more striking example of the conservative immobility of Chinese thought could be found than the persistence

of these legends. Western writers still reproduce them as historical data in textbooks on the evolution of the script. Only in comparatively recent times have a few writers, native and foreign, tackled the subject in a scientific spirit, freed from the trammels of immemorial tradition.

The tracing of origins to the Emperors Fu-hsi, Shên-nung, and Huang Ti is merely an example of the universal habit of assigning the beginnings of civilization to mythical culture-heroes. Problems concerning the antiquity and significance of the Eight Trigrams (*pa kua*) cannot be discussed here, nor can the stages in the evolution of writing occupied by knotted cords and the related notched sticks or tallies. Some regard the Trigrams as parents of the numeral signs which may have been the earliest of all script. The knotted cords and the tallies are relevant to the subject in so far as they enter into the history of the duplicated contract; but I reserve discussion of them for the second volume of this Catalogue. As to Ts'ang-hsieh, the traditional father of Chinese writing, the fact that he is reputed to have had four eyes may be remarked in order to indicate that he is not less shadowy than his imperial master, Huang Ti, whose mother conceived him through seeing a flash of lightning and who, together with ministers and concubines, left this world by ascending to heaven on the back of a dragon (**25**, iii 488-9). Some may still hold that the Grand Annalist Chou has more claim to historical solidity; yet the late Wang Kuo-wei argues shrewdly that his supposed existence rests mainly on the mistaken reading of a certain character in the opening sentence of the book attributed to him. The character is, he thinks, not the name "Chou," but the verb *tu*, meaning to "decipher," "recite," or "comment on" (**167**, v 14-16). Another theory destroying the popular figment of one Chou, a Grand Annalist of the ninth century B.C. who invented the "Great Seal" script, is that of L. C. Hopkins. He takes the character *chou* to mean "deduction from omens observed," and hence "an oracular response" (**57**, 1019-1021). If this view be accepted, the term *chou wên*, used synonymously with *ta chuan*, would apply fitly to the writing on the Honan Finds, to be mentioned later. Li Ssŭ is a tangible personage, but his reputed connection with the "Small Seal" script is based on an act of political expediency as standardizer, not originator, of a style of writing. The crediting of the Official Script (*li shu*) to the inventive genius of Ch'êng Miao is probably but another instance of the human habit to set up culture-heroes (*v. inf.*, p. 13).

Under the Former Han, notions concerning ancient script seem to have been vague. There is, for instance, the tale of the perplexity caused by classical texts which had lain hidden in the hollow wall of a house said to have belonged to Confucius. When destruction of the house about 150 B.C. brought the books to light, their decipherment was considered difficult, the characters being likened to tadpoles (*k'o tou tzŭ*). Whatever the truth of this tale, repeated in the *Shuo wên* Preface and elsewhere (*v.* **133**, 125-147), it may be taken to reflect the fact that the Ancient Figures (*ku wên*) were unfamiliar to scholars of those times; and a curious point is that few genuine archaic characters known to us may be recognized as shaped like tadpoles. This general ignorance resulted from the thoroughness with which the First Ch'in Emperor attempted to sweep away all vestiges of former culture. The Burning of the Books and the melting down of ancient bronzes were measures intended to destroy traditions and customs likely to retard his project of a homogeneous empire. Li Ssŭ was the instigator, and association of his name with the "Small Seal" script merely commemorates another act designed to further the policy of a united China. A standardization of script was calculated to stop disruptive influences fostered by the existence of various local styles of writing.

Few documents maintaining memory of ancient script remained after the revolution imposed by the First Ch'in Emperor and his able minister. Hsü Shên had to travel far and wide throughout the country in order to gather materials for his dictionary. Writings on perishable bamboo slips had less chance of survival than records cast in bronze. As time went on, hidden bronzes came to light, but the comparative rarity of these finds during the Han period may be gathered from the stir they occasioned, as described in the national annals. Gradually through the ensuing centuries the number of recovered bronzes increased, and collectors of them and students of inscriptions are recorded from about the fourth century A.D. (**96** and **121**). Not till the great classical renaissance under the Sung (A.D. 960-1279) did a regular school of epigraphy come into existence. More than thirty Sung writers are known and forty-seven books, though only seventeen survive to the present day (**80**), and the

authorship of some is uncertain. Eleven are included in the accompanying Bibliography (**5**, **21**, **29**, **71**, **123**, **130**, **131**, **155**, **159**, **160**, **161**). Epigraphic studies languished under Mongol and Ming emperors. A revival started early in the Ch'ing period and has flourished progressively since. The earlier of the latter writers depended largely on their Sung forerunners; but in 1899 an event occurred which profoundly stirred the course of Chinese epigraphy and quickened enterprise at a time when it had become stagnant.

Nearly two miles to the west of the district city An-yang, in the north of Honan, there were excavated in circumstances imperfectly known several thousand fragments of bone and tortoiseshell incised with archaic script. Turmoil caused by the Boxer Rising of 1900 hindered a proper investigation at the time, and the most reliable information comes from Lo Chên-yü, who visited the spot in 1914. The actual locality is that of the village, now called Hsiao-t'un, which stands probably on the same spot as the town of Ho Tan Chia, mentioned in the first illustrated catalogue (**123**, iv 45; v, 12) as the place where certain bronzes were found. Since one of the sovereigns of the Shang-Yin dynasty is named Ho Tan Chia (*v.* **68**, 76), presumably the site was recognized as that of a Shang-Yin city. Before the discovery of 1899 it had been identified with Hsiao-t'un in the local topography (**111**, 20). All the inscribed fragments lay within an area of about seven acres, and they are deemed, for reasons which cannot be gone into here, to be remains of archives left by royal diviners of the latter part of the Shang-Yin dynasty, more than a thousand years B.C. Their surprisingly good state of preservation is doubtless due to the protective properties of loess in which they were buried. These large and incontestably genuine additions to the stock of known pre-Ch'in documents, which hitherto had been almost entirely limited to bronzes often of doubtful authenticity, opened out unexpected vistas. Naturally the Honan Finds have been eagerly welcomed by Far Eastern and Western scholars. Among the former, the recognized pioneer is Liu O who, in 1903, published a photo-lithographed work (**100**) reproducing inked-squeezes of one thousand fragments selected from his collection numbering five times as many. The nucleus of this collection had been made by Wang I-jung (styled Lien-shêng), an eminent scholar and a Grand Secretary and Libationer of the Imperial Academy, who is said to have been the first archaeologist to recognize the momentous discovery, and this he did through the chance purchase of an inscribed Honan fragment among some so-called "dragon-bones" at a drug store in Peking. On the entry in 1900 of the foreign forces into the capital, whence almost all officials had fled, the Grand Secretary, following ancient precedent, committed suicide, together with his wife and daughter-in-law. But for his untimely end, Wang I-jung would probably have figured in history as the earliest exponent of the Honan Finds. This honour belongs to Sun I-jang, whose book (**139**) is a creditable achievement, though it has been superseded by many Chinese and Japanese works which have since been devoted to the subject. A recent bibliography contains a list of twenty-two, and this is incomplete (**74**, iv 19, 20). The most important contributors are Lo Chên-yü (**109**, **112-118**) and Wang Kuo-wei (**165**, etc.). Among Western writers the study was started in 1906 by F. H. Chalfant (**12**); and it has been ably continued by L. C. Hopkins (**54-63**, **65**, **66**, **68-70**), who stands alone in this and other departments of Chinese epigraphy, so strangely neglected in the Occident.

The Chinese give earnest attention to a study which provides essential clues to the foundations and progress of their civilization. Epigraphy has occupied many of their best brains from Ou-yang Hsiu in the eleventh century (**131**) onwards, and the literature is voluminous. The recently published index of works dealing with "inscriptions on metal and stone" (*chin shih wên*), the term used to denote epigraphic studies in general, contains more than 800 items (**74**). This fact sufficiently indicates the extent of the literature, and in a sketch such as this I can but hint at the whole, and pick out some of the most important items for inclusion in the accompanying Bibliography. A few names, however, claim special notice beside those already mentioned. The pioneer of the Sung school of epigraphy is Yang Nan-chung, whose shrewd readings of inscriptions are quoted by Ou-yang Hsiu and Lü Ta-lin (**123**). Others prominent during that period are Hsieh Shang-kung (**71**), Wang Ch'iu (**159**), and Chêng Ch'iao (**30-32**). Tai T'ung (**142**) under the Yüan, and Sun I-jang (**139-141**) and Wu Ta-ch'êng (**178-181**) within the last sixty years had the originality to break away from traditional theories of invention, and recognized the evolution of script as a gradual process which started from pictorial

signs. The eminent scholars Juan Yüan (**76**) and Wu Shih-fên (**177**) collected and edited opinions of their predecessors; also they set down many later-known inscriptions which they deciphered with resource and acumen. Criticism is, however, against them for too great dependence on the Sung school. The writings of Lo Chên-yü and Wang Kuo-wei mark the beginning of a truly scientific spirit. Lastly, tribute is due to the authors of two recent encyclopaedias of Chinese script. The larger and more comprehensive is the monumental work (**143-145**), achieved after thirty years' labour, by the Japanese scholar Takata Tadasuke. His conclusions, which go far to vindicate the worth of the *Shuo wên*, and his wide range of documentary evidence will be turned to as the basis for all future studies. The enterprising originality, shown in this great book of many volumes, so often proves stimulating and just, that cavil would seem ungrateful if sometimes the author goes apparently beyond the bounds of probability, as, for instance, when he traces the character for " fire " back to prehistoric eruptions from supposed volcanoes of the K'un-lun Mountains (**144**, i B, 55-6), or the character for " ancestor " to an origin connected with the Egyptian pyramids (**144**, i B, 56). The second encyclopaedia (**163**) is also the labour of a lifetime. Wang Jên-shou does not attempt a scientific investigation into the structural and formal evolution of script, such as Takata undertakes; but he assembles ancient variants of each character as written in supposedly authentic inscriptions drawn from all sources except the Honan Finds.

Rude pictorial signs, representing things and actions of daily life, are the foundations on which the vast and complex fabric of Chinese writing is reared. Possibly they belong to a common stock shared with neolithic forefathers of other races. Such signs, fitly called " pictograms," satisfy the needs of only a primitive state of society. As civilization dawns, the demand arises for means of record and written intercourse. Hopkins (**57** and **58**) has advanced reasons for believing that professional diviners must have been among the most regular practitioners of the art; for we know from the Honan Finds that every act of divination was followed by a record of the date, of the inquiry, and of the oracular response. Perhaps from their hands came the earliest development of script. Another view is that the progressive complexity of governmental machinery required it. Whatever the agency, writing having the essential function, as Tai T'ung observes (**67**, 21), " to make speech visible," its evolution was dominated by the character of the spoken word. Unfortunately little is known concerning the earliest speech of China. Additions may in time be found to our scanty data, yet certain systems of spelling and rhyming must remain the chief clues. Spelling dates only from the opening centuries of our era; the exact time is not known, but tradition assigns the invention, or at least the encouragement, of the art to missionary zeal of Buddhists from India, while translating their sacred books into Chinese. The method, which found most favour and has survived, is called *fan-ch'ieh*. It gives the sound of a character by writing two other characters; the first to represent the initial and the palatalization, the second to represent the final (including the vowel), the labialization and the tone. The earliest dictionary to use this system was the *Yü p'ien* (**87**). It has suffered so much from revision that the extant version is unreliable. The *Ch'ieh yün*, representing speech in northern China, followed it in 601, fifty-eight years later; but of that there survive only some fragments of early re-editions found by Pelliot and Stein at T'un-huang and some in Japan. Another edition, revised and enlarged, appeared in 751 under the title *T'ang yün*; but that too has perished, though fragments of it were also found by Pelliot and Stein. After undergoing further revision and additions, it was republished in 1011 as the *Kuang yün* (**7**). When Hsü Hsüan in 986 brought out his edition of the *Shuo wên* (**72**), he included pronunciation according to the *T'ang yün*.

These preserve the chief vestiges of ancient speech. Information to be gained from rhyming systems, from Chinese words transliterated into other languages and *vice versa*, and from relics of the past persisting in certain modern dialects cannot be discussed here. Though the *Ch'ieh yün* is said to take cognizance of ancient pronunciation, it must not be relied on to carry us back much beyond its own time. We can but guess how Confucius spoke; yet we may feel fairly sure that speech of the first millennium B.C. was essentially akin in structure to that of the sixth century A.D. Probably it was tautophonic and mainly monosyllabic, which means that there existed only a limited number of vocables or syllables to serve for a multitude of words, nor were syllables habitually combined (either

to form stem-words or as derivative or inflexional affixes) in order to enrich the language. As more words arose, the difficulty increased of distinguishing between them, because the range of sounds remained fixed and was not extended to keep pace with the growth of vocabulary. Furthermore, these inconveniences of homophony probably were aggravated in ancient times by a tendency (known to have prevailed later) towards sound-simplification.

The foregoing surmises find support in the script. The earliest relics known—inscriptions on ancient bronzes and on the Honan Finds—display the same principles of construction as do the characters which have been current during the last two thousand years. A traditional explanation of these principles is cited in the *Shuo wên* Preface. It is the classification of all written signs into Six Scripts (*liu shu*) or modes of expressing spoken words in writing. Without attempting to probe into the antiquity of this classification, mention may be made that the term *liu shu* occurs in the curriculum laid down by the *Chou li* for the education of royal princes and sons of high dignitaries (**10**, i 298). Another and more general classification is a division of the whole body of script into Figures (*wên*) and Derivatives (*tzŭ*). Figures (*wên*) include the first two classes of the Six Scripts, Derivatives (*tzŭ*) the remaining four, which embrace the main bulk of Chinese characters. The Six Scripts, in order of the *Shuo wên* Preface, are as follows:

I. Self-explanatory Signs indicating a physical action, state, or relation (*chih shih*).



FIG. 1.

The first example given here (FIG. 1 *a*) shows ancient and modern versions of the sign for *shang*, "above." An instance of this ancient form occurs third in the last column of FIG. 32. The second (*b*) is the converse *hsia*, "below." No simpler means could be devised for indicating the position of something, represented by a shorter line or sometimes a dot, relative to the mean, represented by the longer line. The next example (*c*), showing the way *san*, "three," is written, is as simple; it occurs thrice in FIG. 32. Presumably it is traceable far back to the primitive record notched on a stick. A pictogram of the sun just above the horizon (*d*) stands for *tan*, "dawn" or "day." But the commoner and probably more archaic version, shown as the second example of FIG. 1 *d*, is not so easily explained. The blob below the disc may represent banks of mist. Likewise *hsi*, "evening," is indicated by the crescent of the moon, also given here (*e*) in its ancient and modern forms. It is a pale moon as seen when daylight dims; for its pallor is manifested by omission of the stroke which the usual pictogram for the moon contains (*v.* FIG. 2 *b*).

II. Pictograms or outlines of the forms of objects (*hsiang hsing*).



FIG. 2.

The word *jih* for "sun" or "day" is written with a pictogram (*a*) of which the pattern type presumably is a circle surrounding a dot or line. Seldom, however, is the outline geometrically circular; often it is oblate (*v.* FIG. 10) or it is flattened on one side like the form copied above (*a*) from FIG. 18. Example (*b*) likewise shows two ancient forms together with the modern character. The first is from FIG. 32, the second from FIG. 33. It is the pictogram for *yüeh*, "the moon" or "month," and it portrays the crescent or the waning moon. Perhaps the enclosed line or dot in both (*a*) and (*b*) indicates solidity. Example (*c*) is an obvious picture of a range of peaks, and it stands for *shan*, "mountain." Lines representing the swiftly running waters of a stream are fitly used for writing *shui*, "river" or "water" in general (*d*).

III. Phonetic Compounds which "formulate sound" (*hsing shêng*) or, as the commoner term has it, "harmonize sound" (*hsieh shêng*). They are composed of two or more signs, one of which gives the meaning, another the pronunciation.

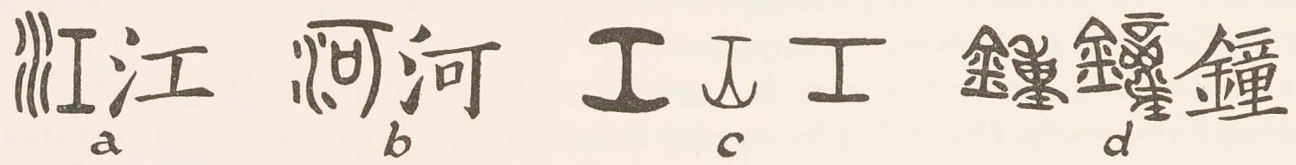


FIG. 3.

The *Shuo wên* Preface gives as examples two characters, *chiang* and *ho*, both meaning "river." They are presented here (*a* and *b*) in archaic and modern versions. The pictogram devised to stand for *shui*, a word meaning "water" in general or "river" in particular, has been cited above (FIG. 2 *d*). But two other words were used for "river": in ancient times the first may have been pronounced somewhat like *kung*, the second somewhat like *k'o* or *k'a*. When the scribes wished to write these words, they borrowed two signs then in use for two words of similar sound. The first sign stands for *kung*, meaning "handiwork." Evidently it is a pictogram of an artisan's tool, but I doubt whether the usual explanation of "carpenter's square" is correct. Three archaic forms of it are given above (FIG. 3 *c*); and many variants are recorded by Takata (**143**, viii 1-3). At any rate, the picture of the tool *kung* conveys no graphic allusion to the river *kung* (now pronounced *chiang* in Peking, and *kong* in several southern dialects), so the scribes added the "water" pictogram to indicate the meaning. This added element is generally called the "radical"; but the word "determinative" is more appropriate. The borrowed element is called the "phonetic." A similar mode of construction was followed in the method invented for writing *ho* (FIG. 3 *b*). Here the phonetic element is partly pictographic, since it contains the outline of a mouth.

Another example of this numerous class is the character for *chung*, "bell" (*d*). The determinative is the ancient sign for "metal," while the sound is indicated by the character for "menial," which in ancient times was probably pronounced *t'ung*. It occurs in the inscription (FIG. 33) on a bell belonging to the Eumorfopoulos Collection. Twice in this inscription its place is taken by the character for its homophone, the name of the type of vase shown on PLATE LII. The first of the characters shown in *d* is this borrowed form, which as such belongs to the last of the Six Scripts, but at the same time it serves also as an example of a Phonetic Compound.

IV. Suggestive Compounds which "assemble ideas" (*hui i*). Their significance is apparent from the meaning of their component parts; therefore they may fitly be called Ideographic Combinations.



FIG. 4.

For example, the characters *wu*, "armed force" or "military prowess" (FIG. 4 *a*), *hsin* "trust" (*b*), *ming* "bright" (*c*), and *chan* "prophesy" (*d*).

The structure of the first character is the subject of a homily, recorded in the *Tso Commentary*, where a certain Viscount of Ch'u reproves the aggressive tendencies of his minister by explaining that true military prowess, as signified by the two components of this character, is "to stay the weapon" (**94**, v 315, 320). More consistent with the habits of that time and more epigraphically valid would be the explanation that the character, instead of teaching peace and mercy, really combines "foot" and the halberd or dagger-axe (*v. inf.*, pp. 66-68), symbolizing respectively "movement" and "weapons in general," and therefore means "war" (**65** (1927), 769). In *hsin* the association of "man" and "words" is hopefully taken to signify "good faith," "belief." Note should be made that what is probably the only pre-Han form of this character known (*b*) has the "words" element replaced by the "mouth" pictogram with analogous significance (*v.* **143**, lii 21). Perhaps the union of pictograms

for " sun " and " moon " to indicate " light " or " brightness," connoted by the word *ming* (*c*), is more convincing than the structure of *hsin*. The explanation of another ancient form of *ming* would require more space than can be spared here (*v.* **65** (1917), 776-80). The last example (*d*) is specially interesting because it often occurs on the Honan Finds. It is a combination of the pictograms for " mouth " and for the cracks which occur on a piece of tortoiseshell or bone when the oracle has been sought by the scorching process (*v.* **22**). Together they signify a declaration of the oracular response.

V. Deflections and Inversions (*chuan chu*).

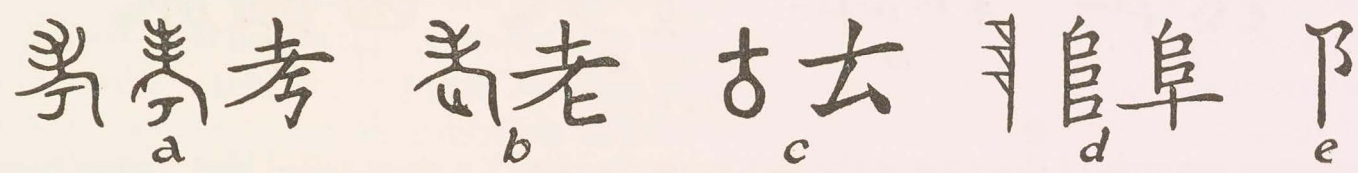


FIG. 5.

So far as can be gathered from the cryptic definition given in the *Shuo wên* Preface, each group of cognate characters included in this class has a common element representing a common sense. The Preface cites *k'ao* and *lao* (FIG. 5, *a* and *b*) as examples, perhaps to illustrate the deflection or inversion of the lower element about a pivotal axis; or perhaps to show that, while the sharing of one immutable element by all the characters of a certain group manifests their general kinship in meaning as well as form, different shades of meaning amongst members of the group are signified by respective changes in position of another (variable) element in relation to the common (immutable) element.

Many writers have attempted differently to expound Hsü Shên's definition, the ambiguity of which may not be his, but may be due to some instance of the textual corruption known to pervade the dictionary in its extant form (*v.* **67**, x-xiv; **37**, intro. 12-16, 37; and **14**). On the other hand, Hsü Shên may himself have misunderstood the traditional term *chuan chu*, the latter word of which offers the chief conundrum. Theories, notably that of Chu Tsun-shêng (**37**, intro. 12-16), which take the term to connote sense variants of a written word, fail to give a satisfactory solution. For one reason, they involve a dual classification for every *chuan chu* character; since each clearly might be allotted also to one or other of the remaining five of the Six Scripts. In short, a mechanical or physical meaning seems the most feasible for the term, which may be approximately rendered " shifted axes." Thus it would include a wider range of deflection than that exemplified in *k'ao* and *lao*, which may be called " reversed characters " only as regards their lower element. Even so, the explanation of " reversed characters " does not apply strictly to *k'ao* and *lao*; for their lower elements differ, apart from position. In the former the element is *k'ao*, and in the latter *hua*.

Sometimes the entire character is reversed, while the pivotal axis remains constant, as, for example, when one of a pair of cognate characters faces to the left, and the other to the right. An instance of a character reversed on a horizontal axis is that for *t'u*, " childbirth " (FIG. 5 *c*), which occurs only in ancient inscriptions (**143**, xl 40). It is the character *tzŭ*, " child " (seen in FIGS. 10, 15, 26, 32, 33, 36, 37, and 38) turned upside-down.

A favourite example of the wider sense of " shifted axes " is *fou*, " table-land," " huge " (FIG. 5 *d*), which is generally recognized as the pictogram for *shan*, " mountain " (FIG. 2 *c*) rotated through a right angle. At the same time, mention must be made that another theory regards *fou* as a pictogram of a cliff with several strata of earth indicated (*v.* **143**, xv 1). The first example of *fou* shown here (*d*) is an archaic form from the Honan Finds, and it faces to the left. The other two (*d*) are modern equivalents. It occurs as the determinative in many Phonetic Compounds, generally on the left of the phonetic element and turned in the direction opposite to that shown in the first example (*d*). Functioning thus, it is one of the most familiar forms in bronze inscriptions; for it is part of the ubiquitous character *tsun*, to be discussed later (pp. 24, 25). Outlined examples, as the determinative in other Phonetic Compounds, may be seen in the second column of FIG. 40 and twice in the third column of FIG. 9; but often it is written solid. As a determinative, *fou* in modern script generally appears in contracted form (*e*), though sometimes like the middle example in (*d*).

VI. Borrowed or Adopted Characters. These " borrow help " (*chia chieh*) on behalf of words,

hitherto unwritten, which resemble them in sound but not in sense. Accidental and intentional interchange of characters representing homophones also come within this category. Furthermore, the modern tendency is to include also characters for which, strictly speaking, a more correct term would be " misused." Such are borrowed because of close resemblance in aspect, despite unlikeness either in sound or sense.

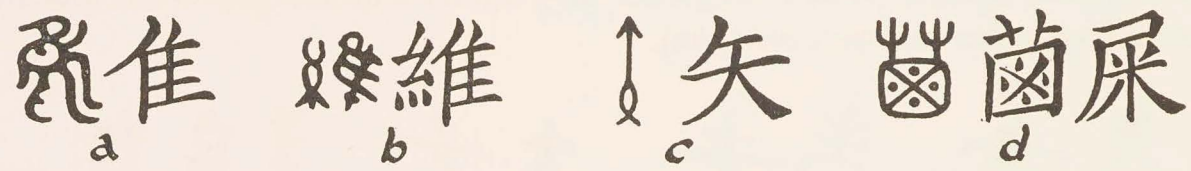


FIG. 6.

A common example of this class is the pictogram for *chui*, " a short-tailed bird," when borrowed to stand for the particle *wei*, frequently used to begin an inscription or open a sentence, without other very definite significance. Both the long inscriptions on bronzes in the Eumorfopoulos Collection (FIGS. 32 and 33) start with this pictogram. The form given above (*a*) is copied from FIG. 32; in FIG. 33 the pictogram is partly obliterated, but it may be seen in certain inked-squeezes of the same inscription taken from other bells which belong to the same set. An archaic form of this opening particle, together with its modern equivalent, is given here (*b*). It appears on a bell (**143**, *pu-i*, vii 17). Another variant may be seen at the beginning of the inscription reproduced in FIG. 10. And there is another variant which is written in its modern form with the " heart " determinative. These three are, in fact, instances of the third of the Six Scripts; for, while the bird pictographic element formulates the sound, the accompanying determinatives indicate different shades of meaning: *e.g.*, the first (*b*), being a pictogram of a skein of silk or hank of cord, conveys a copulative sense; the second (FIG. 10), representing " mouth," suggests the opening of a statement; while the third, with the " heart " determinative, indicates a train of thought. Though the initial sounds of *chui* and *wei* are not now identical, there can be no doubt that in ancient times the word for short-tailed birds closely resembled the particle in pronunciation (*v.* **82**, 358).

Another classical example is the pictogram for *shih*, " arrow " (*c*), when borrowed to stand for its homophone meaning, " dung." It functions thus in the fourth chapter of the book attributed to the philosopher Chuang Tzŭ, who belongs to the fourth and third centuries B.C. The sentence is: " Lovers of horses provide baskets for the dung." Often quoted also is a passage in the *Tso Commentary* (**94**, v 279, 282): " . . . They killed him, and hid his body among the horses' dung." Here again *shih*, " arrow," is borrowed to write *shih*, " dung," for which a special character may not have existed when these two books were written. The first shown in FIG. 6 *d* is the " Seal " character entered in *Shuo wên*; the last is the modern equivalent, and the second an intermediate and rarer form, based on the first. As already mentioned, the first example in FIG. 3 *d* functions as a borrowed character in FIG. 33.

Wang Kuo-wei is one of those who question the adequacy of the Six Scripts as a means of explaining the structural evolution of writing. Moreover, he formulates the axiom that in classifying a character every stage in its career should be taken into account. As illustration, he discusses the character *t'ien*, " heaven " (**167**, vi 8, 9). He begins by declaring that the most ancient form of the character is a pictogram for " man "—an unorthodox view shared with L. C. Hopkins, who arrived at that conclusion independently (**65** (1917), 774-775).



FIG. 7.

The first example Wang cites of this anthropomorphic " heaven " comes from the Honan Finds (*a*); the second from two well-known bronzes. The latter need not be copied here; for an excellent example of like type (*b*) occurs twice in the inscription (FIG. 32) on one of the most important bronzes in the

Eumorfopoulos Collection (PLATES XIII and XIV). Another form (*c*) comes from the Honan Finds, and this Wang classes as a Self-explanatory Sign (*chih shih*), in which the line at the top indicates the locality "above" or "on high," corresponding to the first example already cited to illustrate the *chih shih* class of the Six Scripts. On the other hand, Hopkins (**65** (1917), 775) regards the pair of horizontal lines as a mere contraction of the square in (*a*). To support his theory, Wang gives as a parallel instance the character *ti*, "emperor." The form in which it generally appears on ancient bronzes and the Honan Finds is well represented (*d*) in the fifth column of the same inscription (FIG. 32). The word for the somewhat abstract notion of an "emperor" or "sovereign ruler" was originally represented by borrowing a pictogram for its homophone, the word for "a stalk bearing a flower or fruit" (*e* from **163**, xi 19; *f* from FIG. 32). But, partly in order to obviate confusion, an extra stroke was added at the top (*d*), indicating that the *ti* intended was the one "above the heads of men" —in other words, the emperor *ti*, not the flower *ti* (or *t'i*). For a parallel reason, Wang argues, the picture of a man (*a* and *b*), when used to write the word for "heaven," has its significance and clarity enhanced by the extra stroke at the top. A further reason for avoidance of confusion is the fact that the flower pictogram (*f*) was borrowed to write "not," now pronounced *pu*, but probably at first somewhat like the ancient word *fu*, "flower-stalk." Hopkins writes on these matters in a partly different strain (**65** (1926), 465-468). Finally, Wang remarks that in its "Seal" form (*g*) the character *t'ien* is composed of the elements "one" and "great," and as such should be classed with the Suggestive Compounds (*hui i*). Here the association of ideas would signify the "one great" or "first among the great." Although this is the explanation generally accepted since it was set forth in the *Shuo wên*, it seems open to question, because the character for "great" originated in a pictogram for an adult man (*h*, from **163**, vii 56), and differs essentially from the forms (*a*) and (*b*) only as regards the comparative smallness of the head. Viewed from this standpoint, the "seal" form of *t'ien* might be construed as signifying the "one above men" or even the "firmament above men," either of which interpretations, on the score of indicating a physical relationship, would justify a claim for its inclusion in the *chih shih* class.

The foregoing discussion gives a hint of the endless, and often inconclusive, wars of opinion that may be waged over the Six Scripts. Whether or not the six-fold classification provides ample means of labelling the structural vicissitudes of Chinese writing, it does undoubtedly serve as guide to the main principles which have governed a tortuous evolution. As already stated, the earliest stage was that of pictograms—crude Figures (*wên*) made to represent the simple vocabulary of a primitive people. The *Shuo wên* contains 364 examples. At first these Figures, some merely pictorial and some partly symbolic, were easy enough to invent; but with the progress of civilization the creation of fresh signs to correspond with the increasing scope of the language taxed the ingenuity of the scribes. The difficulties they had to face were occasioned not only by the need to represent words for abstract ideas and general ideas of wide scope and application, but also by the abundance of homophones in their speech. They adopted the various expedients classified under the last four of the Six Scripts. In what order these expedients were used, or whether they were used simultaneously from the first cannot be stated; for the earliest vestiges known pre-suppose the passage of a past far beyond our ken. Perhaps priority might be claimed for the Borrowed (*chia chieh*) class; certainly examples occur with perplexing frequency in the oldest inscriptions. Perhaps the Suggestive Compounds (*hui i*) came next; at any rate, they outnumber the Phonetic Compounds (*hsing shêng*) on the Honan Finds and on bronzes accounted the most archaic. From the Borrowed and Phonetic classes may be gleaned precious information concerning the sounds of the ancient language. Many words, formerly homophonous, have changed in pronunciation with lapse of time; and so the Phonetic Compounds, which comprise about nine-tenths of the characters existing at the present day, no longer represent a phonetic mode of script. A peculiarity of Chinese writing is that it mirrors the forgotten speech of several thousand years ago.

So far as is known, the structural evolution of Chinese script may have been in progress for hundreds of years before the second millennium B.C. All is vague and uncertain prior to the beginning of the historical period about 800 B.C.; and much that has been written is mere conjecture concerning

the Shang-Yin dynasty, which is supposed to have reigned for six centuries and a half, till overthrown by the Chou in 1122 B.C. Still more misty is the Hsia dynasty, reputed forerunner of the Shang-Yin; and even the most imaginative of Chinese cataloguers has not dared to date bronzes back beyond the Hsia. Perhaps future excavation will throw light on conditions in China during the third and second millennia B.C., and demonstrate the true relationship between the recently discovered neolithic culture and the beginnings of Chinese civilization. At present the earliest inscriptions available are those on the ancient bronzes and the Honan Finds. Pre-Ch'in inscriptions on pottery and jade are scanty, and probably none survives on stone. The so-called "Yü Tablet" is an undoubted forgery; and there are reasons for dating the Stone Drums no earlier than the third century B.C., as will be mentioned later. Judging from the oldest known documents, which may belong to the Shang-Yin dynasty, the principles of script construction were the same then as when Hsü Shên defined them in the *Shuo*

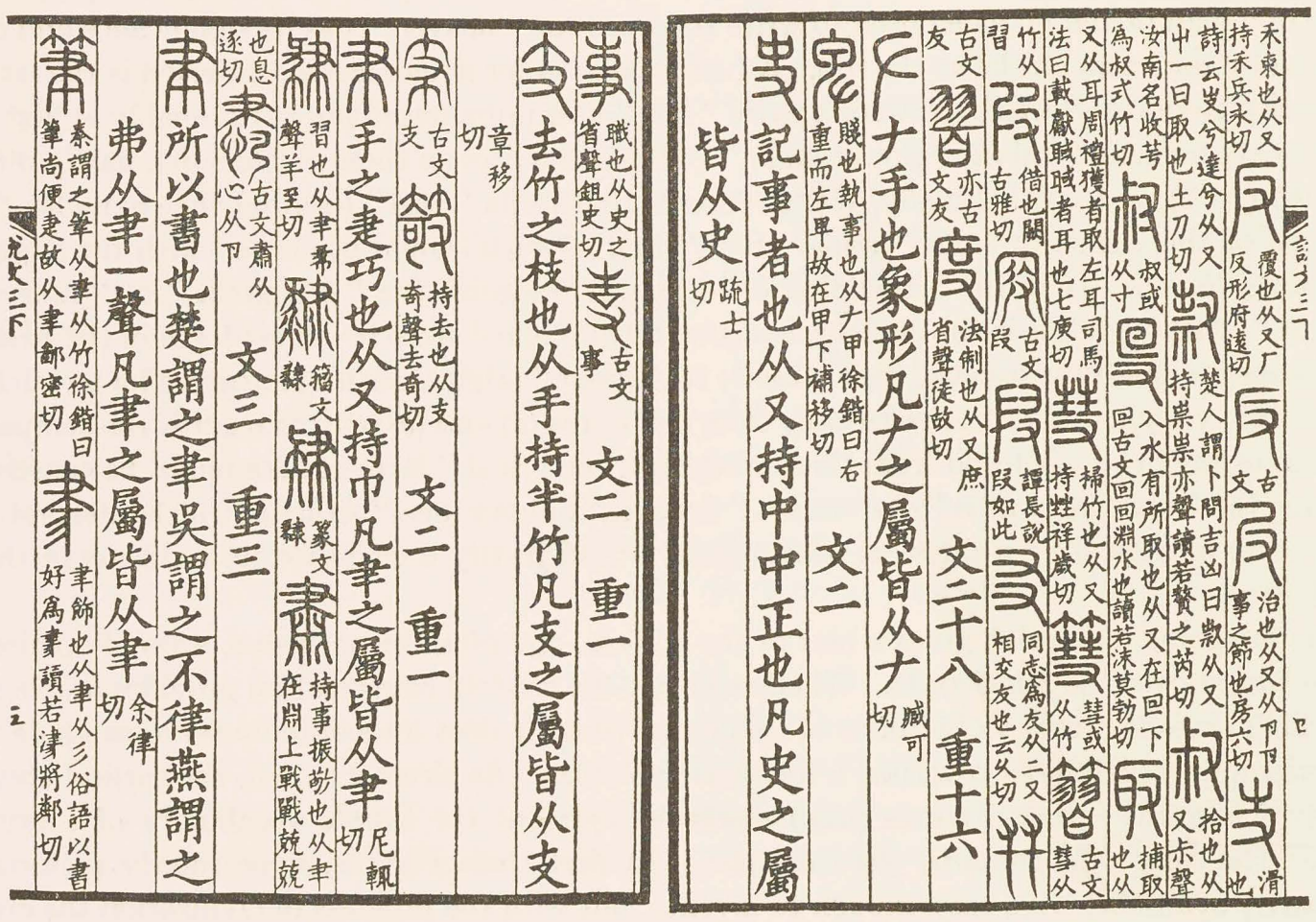


FIG. 8. TWO PAGES OF THE *SHUO WÊN* (72).

wên Preface; and they have not changed since. In other words, structural evolution came to an end at some distant date unknown to us.

The course of the formal evolution is different. Changes in the technique of writing went on past the "ancient" period which may fittingly be held to have ended with the abolition of feudalism in A.D. 221. The chief recognized varieties of early script are the Ancient Figures (*ku wên*), "Great Seal" (*ta chuan*), "Small Seal" (*hsiao chuan*), and Official Script (*li shu*). These four figured in the original *Shuo wên*, where most of the leading or "entry" characters were in "Small Seal," the text was in *li shu*, and examples of *ku wên* and *chou wên* (synonymous with *ta chuan*) were cited in order to explain steps in evolution. All, except the *li shu*, may be seen in the two pages reproduced here from a Sung edition (FIG. 8), where probably they are little changed. For the text, the current style of writing has replaced the original *li shu*. These two pages serve to demonstrate the primary purpose of the *Shuo wên* as an expositor of the evolution of script, rather than a mere dictionary of the language. In fact, it might fitly be called a "scriptionary." The word "recognized," as used above to qualify the four chief styles of ancient script, may well be emphasized for the following reasons. There can be no doubt that writing varied according to locality; perhaps not in so marked degree as dialect, but certainly it varied much. For an instance of divergence in style, look at FIGS. 32 and 33.

Such differences may easily be understood when the social conditions of feudal China are remembered. The multitude of States, great and small, is indicated by a passage in the *Li chi* (**39**, i 269): "The Nine Provinces comprised 1773 principalities, not counting either tenures bestowed on the highest officials of the Emperor or petty States dependent on the great." And these countless principalities were autonomous, except for certain feudal obligations owed by them to the suzerain House of Chou. Each had its own calendar, records, and rites, and probably its own peculiarities of writing and of sacrificial vessels. Even allowing for the tradition that smaller States copied the larger, cultural standards must have differed widely according to locality throughout such a vast stretch of territory.

Mention is made here of a fact to which Hopkins calls attention (**57**, 1030), because it may perhaps be regarded as direct evidence of co-existent different scripts. It is the presence on the Honan Finds of words written each with several distinct types of characters, none of which appears derivable from another. Each type seems to be of independent construction, not a variant of a common parent form through modification, omission, or addition of strokes. May not this plurality of type have resulted from a medley of local scripts at the imperial capital? A hint that such medley did occur may be gathered from a passage in the *Chou li* (**10**, ii 406-7), which records measures taken by the emperor to maintain co-ordination between the suzerain House and vassal States. The relevant part of the passage is: "Every seventh year the interpreters were brought together. They compared the languages, and harmonized modes of speech. Every ninth year, the blind musicians and the annalists were brought together. The written words were compared, and their pronunciation determined." Add to this the fact that feudal princes periodically brought tribute, sometimes in the shape of bronzes (presumably inscribed), the conclusion seems justified that scribes at the imperial capital had opportunity of learning local styles of script. The likelihood that there existed a number of cultural centres, each having distinctive characteristics, is another aspect of Chinese archaeology which awaits the light of systematic excavation. A step towards unravelling the problem has been taken by Wang Kuo-wei in his argument that the Ancient Figures (*ku wên*) continued current in the eastern part of China until the end of the Contending States period (480-221 B.C.), while the "Great Seal" was the script practised in the Ch'in State, on the west, during the same period and some two or three centuries before that (**167**, vii 1). In short, we must revise long accepted notions concerning sequence of events in the history of calligraphy, as well as discredit tales of inventions by legendary culture-heroes.

Before considering actual examples of change in the technique of writing, some estimate of the available criteria is called for. As regards bronzes, the laborious task has been partly performed by Wang Kuo-wei, who has tabulated all inscriptions deciphered and explained by leading writers on epigraphy under the Sung and Manchu dynasties (**171** and **169**). The former list contains 643 items; the latter 3264, of which 70 are considered by Wang to be spurious. Although the three great catalogues (**3**, **4**, and **8**) of the Manchu imperial collections are not analysed in these tables, certain objects formerly in these collections are included, and Wang's figures tell approximately how many published bronze documents are accessible to students. Of the total 3264 listed inscriptions, the numbers apportioned to various periods are as follows: 2635 to the Three Dynasties (Hsia, Shang, and Chou), 71 to the Ch'in, and 558 to the Han and subsequent dynasties. Add to these the Honan Finds, and the body of criteria is considerable. Even a rough estimate of the total number of inscribed fragments from Honan can hardly be made, owing to dispersion; it must amount to many thousands. But data presented by Hopkins (**57**, 1029-33) convey an inkling of the vast value of the Finds to epigraphic studies. Some 3000 different characters occur in their legends, and about 600 have been identified. In view of the wide range of variation, this statement must be qualified by a note of the difficulty in discriminating between different characters and mere variants of a character.

As a supplement to the published criteria, the inscriptions on bronzes of the Eumorfopoulos Collection are important. One (FIG. 33) has long been famous, and is the subject of discussion by at least five eminent Chinese scholars, as will be mentioned later. The bell which bears it belongs to a set of twelve, all similarly inscribed; but this example happens to be the best preserved. Chief among the other inscriptions of the Collection, not so well known, is one of 69 characters (FIG. 32), which combines an admirable sample of calligraphy with perplexing problems of decipherment and transla-

tion. On the ancient bronzes in this Collection, as on those elsewhere, the Ancient Figures (*ku wên*) predominate, and pictograms are numerous; but the Honan Finds exhibit the latter in still greater profusion. Many Ancient Figures on the bronzes have already reached a stage (as also have those on the Honan Finds) when convention, contraction, and corruption had changed the simplicity of primitive pictographic expression. Certain forms may be labelled "Great Seal" to distinguish them from the closely related "Small Seal." The question is whether any very ancient inscription written uniformly in "Great Seal" survives. Only fragments remain of the *Shih Chou p'ien* (*v. sup.*, p. 1), which tradition declares served under the Chou dynasty as a copy-book for the instruction of pupils in writing "Great Seal." Since the beginning of the seventh century A.D., the date when the Stone Drums were found in Shensi, claims have been made that their inscriptions offer representative examples of the "Great Seal" script. The Stone Drums are ten boulders, roughly shaped into truncated pillars which vary in height from a foot and a half to nearly three feet, with an average circumference of seven feet. After passing through many vicissitudes, they now stand in the gateway of the Confucian Temple at Peking. The inscriptions incised on the sides of the stones are estimated



FIG. 9. HALF ACTUAL SIZE.

to have comprised originally some 700 characters. Ou-yang Hsiu, writing in the middle of the eleventh century, notes that then only 465 had escaped the ravages of time (**131**, i 13). Fortunately inked-squeezes, taken about his time, were still preserved in the famous library of the Fan family at Ningpo when Juan Yüan was Literary Chancellor of Chehkiang Province towards the end of the eighteenth century. Juan had facsimiles cut on stone, and placed them in the College at Hang-chou. Part of an inked-squeeze, taken from one of these, is copied here (FIG. 9). Owing to the hollowing out of the stone, before its discovery, to fit it as a mortar for the pounding of rice, only four characters of each column remain. Any attempt to translate such a fragment would be idle, and a decipherment in modern script is given by Bushell (**11**, 171). The eight columns (FIG. 9) serve to show the style of script generally accepted during the last thirteen centuries as a "Great Seal" document dating from the reign of King Hsüan (827-782 B.C.) of the Chou dynasty, or even, according to some, from three centuries earlier. Ou-yang Hsiu was the first to doubt this supposed antiquity, and Chêng Ch'iao (A.D. 1104-1162) declared the Stone Drums to be products of the Ch'in dynasty in the third century B.C. (**32**), a view supported by modern opinion as set forth in a recent article by Ma Hêng (**124**). Certainly, the style of these characters, of which some 270 survive in a much damaged condition at the present day, closely resembles that of the "Small Seal" script and certain inscriptions known to date from the Ch'in. Moreover, parallels to several phrases on the Drums may be found on Ch'in monu-

ments. Much literature concerning the Stone Drums exists; for nearly all writers on epigraphy discuss them. Only a few works specially devoted to the subject are included in the accompanying Bibliography (**19**, **32**, and **108**). Bushell's account contains translations of the inscriptions, which seem to record in verse a hunting and fishing expedition (**11**).

The Eumorfopoulos Collection has no representative example of "Small Seal," but the two pages of the *Shuo wên* reproduced here (FIG. 8) illustrate it in their leading characters. According to the historian Pan Ku (*v.* **23**, 1-2), writing in the first century of our era, this script was set forth in the works of three lexicographers who lived in the reign of the First Ch'in Emperor (221-208 B.C.). They are said to have taken the *Shih Chou p'ien* as their basis, but at the same time they sanctioned, and possibly invented, many modifications of the "Great Seal" wherever contraction and simplification seemed feasible. Li Ssŭ is the one whose name has come down in history as the prime mover in establishing "Small Seal" as the standard mode of writing throughout China, no doubt because he was the most famous of the trio and had the power to impose general acceptance of the style. Whether this able administrator, busy consolidating the new régime, actually found time himself to compile the index attributed to him, is open to question. Still less plausible is the popular tradition that "Small Seal" was a new script formulated under the Ch'in. Hopkins, writing in 1911, recognizes amongst the Honan Finds no less than 186 characters closely like "Small Seal" forms (**57**, 1032). Later, Lo Chên-yü finally discredits the tradition by his summary of the position as disclosed by the Honan Finds (**116**, ii 78-9). He states that thirty to forty per cent. of their recognizable characters approximate "Small Seal" forms of the *Shuo wên*; that some others agree with "occasional forms" of the *Shuo wên*; and that others resemble modern forms. On the other hand, eighty to ninety per cent. of alleged *ku wên* and *chou wên* characters, as shown in the *Shuo wên*, do not tally with the equivalent forms on the Finds. Of the small balance (say, ten per cent.) that do agree, most are like *chou wên*, not *ku wên* forms. From these premises he concludes that the "Great Seal" probably dates from the Shang-Yin dynasty, and that the "Small Seal" is equally old. Neither was the former invented by the Annalist Chou, nor the latter by Li Ssŭ. Li Ssŭ was a standardizer, and any characters he may have abolished are likely to have been those foreign to Ch'in usage.

In light of the foregoing, it would seem rash to assume, as some have done, that Li Ssŭ and the other Ch'in standardizers failed to interpret old forms rightly, and consequently invented new characters. These supposed misinterpretations and novelties may have long been known in the west of China where the State of Ch'in had for centuries exercised the chief power. Likewise, the alleged creation of Phonetic Compounds under the Ch'in seems open to question. Future research may throw light on these problems. There remains to be mentioned another factor—the vagaries of scribes which were handed down. Confucius is said to have complained that in his time, about 500 B.C., scribes no longer left a blank when they forgot the correct character. The multiplication of eccentric and unorthodox variants doubtless resulted sometimes from ignorance, but more often from indulgence in that playful fancy to which Chinese calligraphists have always been prone.

The fourth of the chief ancient styles, the Official Script (*li shu*), dates from the Ch'in dynasty. According to one tradition, it was invented by Ch'êng Miao (*v. sup.*, p. 1); but more likely it resulted from the administrative needs of the centralized government recently set up. Pan Ku states that criminal judges devised it in order to hasten procedure in their courts (*v.* **23**, 2). Mere considerations of expediency would call for a simpler and more compact script, especially before the invention of paper when writing was done on slips of bamboo or wood. The First Ch'in Emperor is recorded to have perused daily state documents weighing so much as a hundred and twenty pounds (**25**, ii 180), and when travelling he was followed by cartloads of archives. On the Han dynasty coming into power (206 B.C.) the officials in charge of writing compiled, under the title *Ts'ang-hsieh p'ien*, a glossary in *li shu* which was arranged on the same lines as the three treatises in "Small Seal" mentioned above. Fragments of this and of another, dating from about 40 B.C., were recovered by Sir Aurel Stein from the sands of Eastern Turkestan. The latter glossary, entitled *Chi chiu chang*, remained for centuries the standard copy-book of writing. These fragments, written with brush and ink on slips of wood, should be turned to as examples of *li shu* in that medium dating from about the beginning of our era

(*v.* **25**, slips nos. 1 to 8, 397, 603 and 671). Two inscriptions from the Eumorfopoulos Collection show the same script slightly varied owing to differences of technique. FIG. 37 is engraved on a lamp (PLATE LVIII, A 90 and 91), and FIG. 38 comes from a mirror, which will be included in the second volume of the Catalogue. The mould for the wax pattern of this mirror was probably cut in soft, finely grained plaster, and the technique gives a peculiar quality to the script. Abbreviation and simplification are the characteristics of *li shu*. Pre-existing contracted forms in *ku wên* were adopted and modified, and certain " Seal " characters were shortened. *Li shu* is the direct forerunner of the script current for nearly two thousand years till the present day.

Besides " Great Seal," " Small Seal," and *li shu*, the *Shuo wên* Preface names five other styles of script in vogue under the Ch'in dynasty, as follows: that Inscribed on Tallies (*k'o fu*), that Shaped like Birds or Insects (*ch'ung shu*), that used for Stamps or Seals (*mu yin*), that for Official Notices (*shu shu*), and that for Inscriptions on Weapons (*shu shu*). The scope of this article does not allow much more than mere mention of these less important categories. Inscriptions on tallies will be treated in the second volume. The second class (*ch'ung shu*) includes various fanciful exercises in the art of calligraphy, and quite a number of ancient inscriptions come within it. Takata gives several examples (**144**, iv 31-32). Study of the convoluted disguises under which characters appear in impressions from stamps or seals may be deemed a by-path of epigraphy. The few seals belonging to the Collection will figure in the second volume. Perhaps the inscription (FIG. 34) on a sword (PLATE LXXII, A 155) may be taken as representative of the last class. A complete list of ancient styles of writing cannot be attempted here, but one other must be mentioned which lies midway between " Small Seal " and *li shu*, and is called *pa fên*. Examples may be seen in various native repositories of script (*e.g.*, **98**, i, Han Yang tsung ch'üeh), and the subject is discussed at length by Wêng Fang-kang (**174**, xx).

Beyond doubt the materials of writing have influenced the formal evolution of script as powerfully as any of the factors noticed in the foregoing pages. The traditional Chinese views on this aspect of the subject are assembled by Chavannes (**24**), who draws from them the following conclusions. Before the invention of paper in A.D. 105, writing was done on silk and slips of bamboo or wood, most frequently on bamboo. A wooden style was the tool used until the invention of the brush under the Ch'in dynasty—an invention traditionally attributed to Mêng T'ien, who died about 210 B.C. and is famous also as a soldier and the builder of the Great Wall. The fluid was generally a dark varnish, though ink may have been used, chiefly for writing on silk, before the brush came into vogue. Chavannes cites corrections of the mistaken notion that the knives (*hsiao*) of scribes, mentioned in the *Chou li* (**10**, ii 492) and elsewhere, were intended for the engraving of characters. Their function was really to erase errors, as, indeed, might have been recognized by learned critics, who started or repeated the engraving theory, if they had exercised a little practical acumen. A representative example of a scribes' knife is pictured in the catalogue *Po ku t'u lu* (**160**, xxvii 40). For obvious technical reasons it is unfitted for engraving; yet the usual erroneous explanation is given in the text. Perhaps two knives (PLATE LXXIV, A 167 and 168) in the Collection are scribes' knives, though they differ from the recognized type.

Had Chavannes' article been written after the Honan Finds were known to him, it would doubtless have included an account of engraved script. Examination of many of these fragments leads to the belief that a bronze tool, shaped like our burin, was generally employed; though some appear to have been cut with a knife. Indeed, I have myself succeeded with a bronze burin in imitating on bones many characteristics of the script. The limitations imposed by this technique must surely be taken into account as a factor in the evolution of calligraphy, especially if we accept Hopkins' theory that the professional diviners were anciently the chief practitioners of the art. Even if the Honan Finds be oracular archives which belonged to only one of the imperial capitals, the presumption is probably justified that similar methods of divination were practised at the headquarters of the various princely chieftains subordinate to the suzerain House. Information is scanty concerning social institutions under the Shang-Yin dynasty, but all that is available supports belief that they differed little from the feudal system of their successors.

The technique of engraving on bones with burin or knife tended mainly to restraint and economy in mode of expression, to partiality for straight lines and angles; in short, to qualities the exact opposite of those exhibited in the calligraphy of many archaic inscriptions on bronzes. Probably a school of brush calligraphy existed in the earliest period from which relics have come down to us, despite immemorial native traditions to the contrary, as set forth by Chavannes. Demonstration of evidence to support this theory is one of Takata's greatest achievements. Two Shang-Yin inscriptions are presented here (FIGS. 10 and 11)[1] as manifestations of the brush; for surely the spontaneity and modulation of their line deny any other agency.

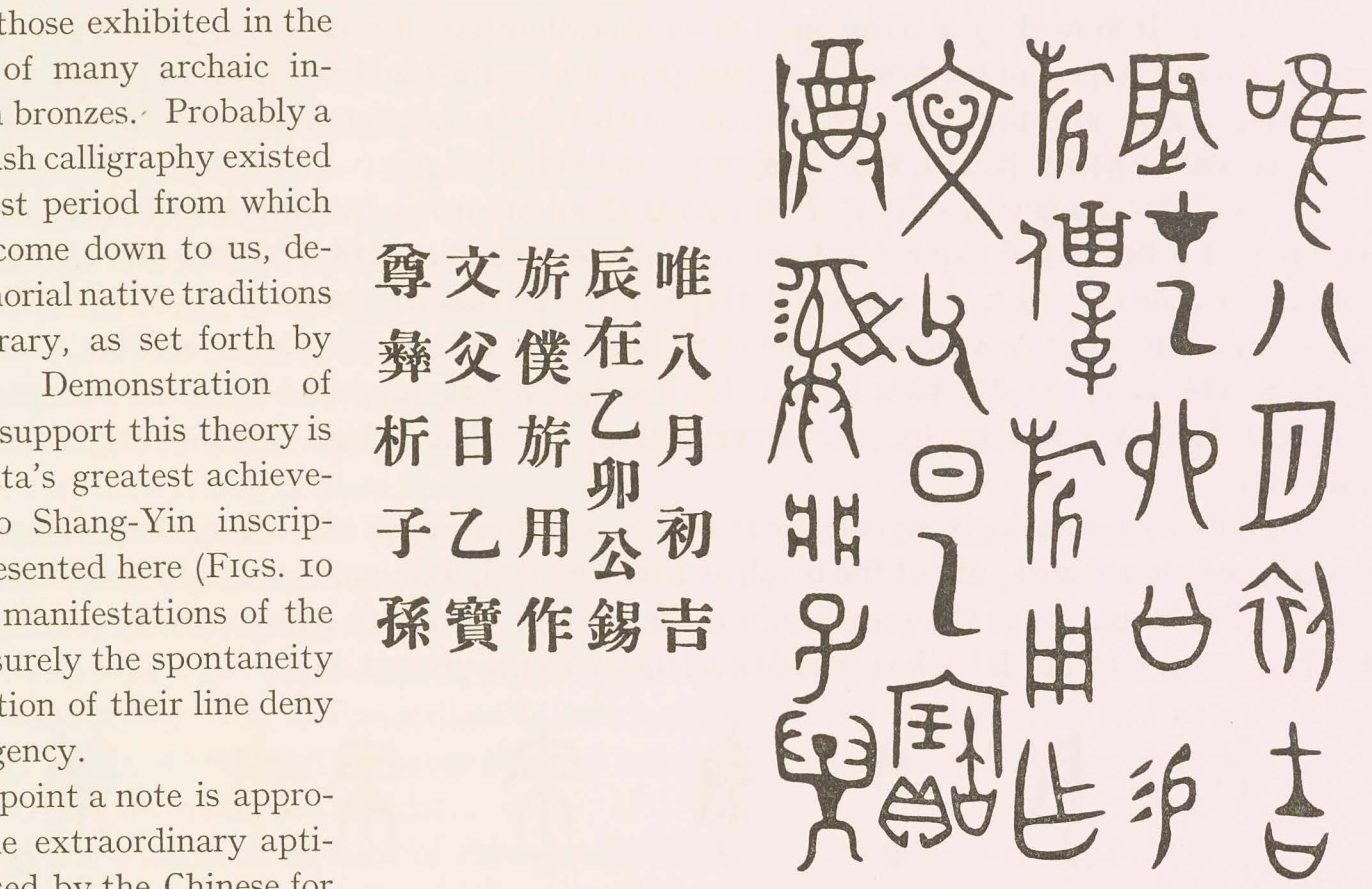


FIG. 10.

At this point a note is appropriate on the extraordinary aptitude possessed by the Chinese for translating features of technique peculiar to one medium into terms of another. Witness the marvellous dexterity with which calligraphic masterpieces on paper are imitated by engravers on stone and wood. Much easier is the task of metal-workers when given inscriptions to reproduce upon bronzes about to be cast, because wax is the material which they engrave. At least, this is true for the great bulk of Chinese bronzes which from earliest times have been cast by the *cire perdue* process. Taking into account this facility and the habitual care exercised by Chinese copyists, notably in regard to script, we may assume that legends on bronzes faithfully reproduce, even to the minute mannerisms and free flourishes characteristic of a brush technique, the original writing of scribes, probably done most often on sized wood or silk.



FIG. 11.

Against the supposition that these two inscriptions are counterparts of brush-work, two arguments may be anticipated: first, that the result was actually achieved with a wooden style; secondly, that there is not enough evidence to justify the dating of them so far back as the Shang-Yin dynasty. Those who may advance the first argument would contend that a wooden style, pointed with facets of different widths, is capable of producing variations in the thickness of a line, if it be turned from one writing facet to another during the progress of a stroke. But the other calligraphic qualities, already noticed, might not be so easily explained away as the product of such a rigid and unresponsive tool. Another possibility to be remembered is that the wooden style may sometimes have been used with its tip frayed in a manner which allowed it to function somewhat like a clumsy brush.

[1] These and subsequent reproductions of inscriptions are accompanied each with a decipherment in modern characters alongside it on the left.

As to the reasonableness of the Shang-Yin attribution, due regard must be paid to the weight of expert opinion based on epigraphic considerations and the archaeological features of the vessels themselves. It is held by a formidable array of authorities: for instance, Juan Yüan, Lo Chên-yü, and Takata in respect of the first inscription (FIG. 10) on the cauldron (*v.* **76**, i 13; **107**, i 14; **119**, i 8; and **144**, iv 23); and the latter two together with Wu Ta-ch'êng in respect of the second inscription (FIG. 11) on the goblet (*v.* **119**, i 37; **144**, iv 5; and **179**, xviii 20).

On bronzes assigned to the earliest period there are many inscriptions which illustrate various features of a brush technique. Takata reproduces a number (**144**, iv 1-28), and also he cites some dating from the Chou period. Among the latter is the bell inscription (FIG. 33), of which the characters are so small, yet well defined, that they must have been written with brush and ink, according to his opinion (**144**, iv 2, 3). My view is that this inscription was impressed upon the wax pattern with a die, as I shall explain later (p. 39). Nevertheless, the original draft was probably done with brush and ink.

Despite such seemingly significant examples, sceptics might still remain unconvinced that they reveal the extreme antiquity of the brush as a writing tool, were not confirmatory evidence of another kind forthcoming. It is the presence in archaic script of certain figures clearly portraying a hand holding an upright brush in the attitude customary to the present day.



FIG. 12.

Two most archaic forms of the pictogram are shown in FIG. 12 *a* to *d*. The first comes from the Honan Finds (*a*) and a Shang-Yin bronze (*b*); and the second (*c* and *d*) from like sources, respectively. They are modes of writing the word represented by alternatives in the "Small Seal" and modern script as shown above (*f* and *g*). The former (*f*), now pronounced *yü*, may have connoted the wooden style as well as the brush; the latter (*g*), now pronounced *pi*, connotes a brush (*v. inf.*). Probably the two words come from an ancient common origin; and on this point the fact should be noted that Tai T'ung gives (**67**, 7) *pi* as the sound of the former character (*f*). Takata discusses these and other examples of which he notes the provenance (**143**, lix 28-30; **144**, iii 5; iv 1, 2). He explains the first archaic form (*a* and *b*) as a brush full of ink, and the second as a dry brush with its hairs parted. He cites a note by Wu Ta-ch'êng (**180**, iii 9), which shows that, while Wu had recognized the dry brush form as a pictographic forerunner of *f*, portraying a hand holding the *pu-lü* brush (*v. inf.*), he had failed to understand the significance of the form portraying a brush full of ink. The pictographic import of the latter form (*a* and *b*) had been noticed, however, both by Lo Chên-yü (**116**, ii 40) and Hopkins (**65** (1924), 430). If we turn to the second page of the *Shuo wên*, reproduced above (FIG. 8), we find the following erroneous definition under the "Small Seal" character shown in *e*: "*Nieh* is skill of hand. It is composed of a hand holding a cloth." But really it is the pictogram of the dry brush with its hairs separated (*c* and *d*). On the same page of the *Shuo wên* there is this under the "Small Seal" character shown in *f*: "It is that with which writing is done. In Ch'u it is called *yü*; in Wu it is called *pu-lü*; and in Yen it is called *fo*. It is composed of *nieh* with *i* as phonetic. *Yü* functions as the determinative in all characters containing it." This explanation of Hsü Shên concerning the structure of *yü* (*f*) seems erroneous. Perhaps the adoption of *yü* to write the word for the writing tool is an instance of borrowing because of its close resemblance to *nieh* (*e*), and therefore, when thus used, *yü* (*f*) falls within the *chia chieh* or last class of the Six Scripts (*v. sup.*, pp. 7, 8). In support of this explanation is the fact that *yü* (*f*) occurs in several classical passages with connotations quite distinct from that of the writing tool (*v.* **143**, lix 28). Probably the character (FIG. 12 *f*), now pronounced *yü*, did connote a brush in ancient times. Evidence from the classics may perhaps be found to support belief that the brush existed at an early date. In an amorous ode of the *Shih ching* there is a passage which has never been fully understood (*v.* **94**, iv 69 and **47**, 71-2). The generally accepted translation:

" She presented to me a red tube " probably should be changed to: " She presented to me a brush with a red-lacquered handle." There are classical allusions also to jade tubes which may have been brush handles, and certain mysterious jade tubes, which have been dug up, may reasonably be recognized as such. Space does not allow further pursuit of this subject beyond the surmising that tubes of various materials, such as lacquered wood and jade, were used anciently for mounting hair brushes. The fact that under the Ch'in dynasty (if not earlier) bamboo was one of these materials, brings us to consider the character *pi* (FIG. 12 *g*) which has been used since the third century B.C. to write the word for the writing (and painting) brush. Under this character, the *Shuo wên* (*v.* FIG. 8) gives the following: " *Pi* is the name (of *yü*) in Ch'in. It is composed of *yü* and *chu* ' bamboo '." Following the definition comes a note by Hsü Ch'ieh, brother of the editor of this edition of the dictionary, to the effect that " *pi* contains the element *yü*, because it is admired for its utility "—a misconception based on the erroneous notions, previously cited. What he should have said is that " it contains the element *chu*, because it connotes a brush of which the handle is of bamboo." Whether General Mêng T'ien was the actual inventor of this sort of brush need not concern us. What we may regard as established is that a brush made of hairs set in a bamboo tube was fashionable during the Ch'in period. The fact that *pi* (*g*) occurs in extant versions of two ancient texts, which may have been written centuries before the Ch'in established themselves on the throne of China, need not invalidate the foregoing argument. For one reason, as Takata remarks, these two works, the *Êrh ya* and *Li chi*, were altered by Han editors, and probably this character was one of those which they changed, during transcription, into the form then current.

Before giving a detailed account of the inscriptions in the Eumorfopoulos Collection and a few from other sources, I will mention the chief problems presented by inscriptions on ancient bronzes in general. To the minds of all students, except perhaps the most ardent epigraphists, the first question likely to occur is whether clues to the cultural setting of a bronze may be gathered from its inscription, so that its place in the progress of art and craftsmanship may be estimated. The answer is that, in the light of present knowledge, such clues are usually meagre and inconclusive. This tantalizing failure of inscriptions to inform us, on points we most desire to know, is readily understood if we consider the social and religious conditions that occasioned the casting of inscribed bronzes, and also the scantiness of surviving criteria concerning ancient Chinese civilization.

So far back as authentic history goes (*i.e.*, about 800 B.C.), and probably far beyond that, China was a congeries of tribes, differing as to dialect and culture, but sharing alike certain obligations owed by their rulers as vassals to the suzerain dynasty. Thus, until the feudal system was swept away in the third century B.C., the country was cut up into a host of semi-independent and more or less isolated fiefs. Each maintained a miniature court and observed a ceremonial code which called for the provision of bronze vessels to befit its dignity.

Besides the feudal system, the closely associated institution of ancestor worship was a potent factor in causing the multiplication of ritual bronzes. Those nobles and high officials privileged to perform ritual services to their ancestors were obliged to follow elaborate rules, and vessels were an integral part of the ceremonial. The ancestors worshipped were not always actual forbears; sometimes unrelated culture-heroes were chosen as " spiritual ancestors " on account of personal qualities or notable achievements. Dependence on the protecting power and goodwill of these ancestors was the mainspring of the cult, and the means to invoke their beneficent intervention in the affairs of this world constantly preoccupied the living. Time and material were lavishly expended in rites and sacrifices designed to propitiate them and nourish their vitality. We know from inscriptions on the Honan Finds that under the Shang-Yin dynasty vast quantities of animals were slaughtered for their sustenance, and hunting and fishing expeditions were organized on a large scale to maintain the supply. Offerings of meat were supplemented with cereal food and drink. To perform these sacrifices in a befitting manner, large numbers of vessels were required, varying in size and shape according to rule; and for them the most valued material was bronze. But, apart from sacrifices, the living unceasingly communicated with their ancestors on all matters of everyday life. No enterprise was embarked upon, no decision made without seeking their advice by divination; and a successful outcome was

marked by the casting of a bronze dedicated to the ancestral shrine. Nor was any event of moment to the family prestige allowed to pass without due announcement to the ancestors. The fact is not surprising, therefore, that among surviving inscriptions a large proportion record the receipt of royal favours. Two in the Collection (FIGS. 32 and 33) belong to this class. It was fitting that events redounding to the glory of the family should be thus commemorated and treasured as lasting reminders for the gratification of ancestors as well as succeeding generations of celebrants. Other records affecting the family fortunes, such as contracts concerning property and delimitations of land, were likewise cast in the enduring medium of bronze sacral vessels, and so secured permanence and sanctity from inclusion in the ancestral shrine. Though the foregoing touches but lightly on a complex institution which bound the living to the dead and profoundly influenced the civilization of ancient China, and, incidentally, the subject of this article, it may serve to illuminate the import of many inscriptions, especially those containing dedications or invocations to ancestors, and the pious wish that generations of descendants shall treasure and devote the vessels to ancestral worship.

Both the feudal system and the cult of ancestors account also for the obscure terseness which perplexes us when we look to the inscription for tangible clues to a bronze's cultural associations. These legends were not framed as documents for the enlightenment of the world at large, either then or later. Their purpose was to serve as records for the archives of the clan or family, or as dedications for ancestral shrines. Each being concerned solely with an isolated and self-sufficient social unit, its terms, though doubtless explicit enough to those on the spot, often make allusions to persons, places, and events which probably were hardly intelligible even in parts of contemporary China distant from the immediate locality. So also the dates recorded are of merely local significance; for each State had its own calendar. Some inscriptions add the date according to the royal calendar; but even that, without accessory information, is of little help, since the name of the king concerned is uniformly omitted. In our part of the world, old uninscribed family portraits offer a parallel. At the time of painting and during the next few generations the subject was so well known that a label was deemed unnecessary; but in course of time memory has faded and identity become lost. Likewise the legends on ancient Chinese bronzes fulfilled their purpose until vicissitudes of fortune extinguished the family traditions.

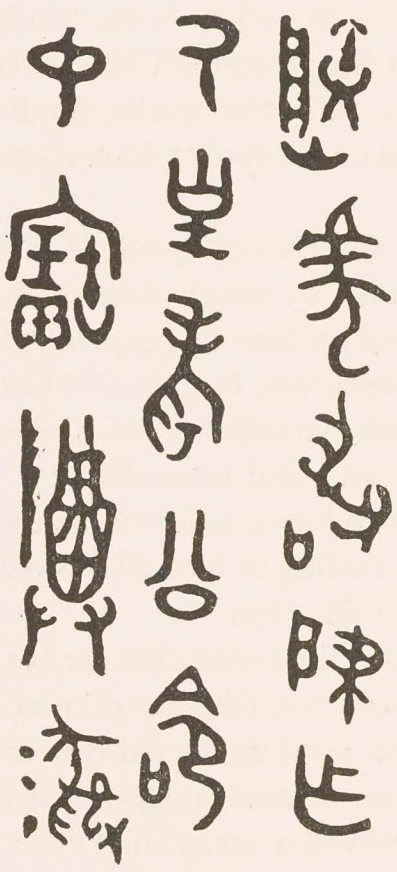

滕虎敢肇作
厥皇考公命
中寶尊彝

FIG. 13.

Moreover, though each of the numerous States of feudal China chronicled its history, the only early contemporary annals that survive are those of the small State of Lu between the years 722 and 481 B.C. Much of the *Tso Commentary*, regarded as an amplification of these annals, is probably no earlier than the fourth century B.C. To turn to them and other fragmentary relics of ancient Chinese history for clues to inscriptions on bronzes, recovered from all parts of China, is generally an idle quest. Chinese critics often pursue these quests, and evolve therefrom identifications which show a naïve disregard for plausibility. Some strange errors of judgement in this respect occur in the pages of *K'ao ku t'u* and *Po-ku t'u lu*. Other critics condemn such fantastic documentation, notably the Sung writer Chao Ming-ch'êng, who points, for example, to a glaring instance in the former work (**21**, xi 2). Lü Ta-lin cites there the opinion, expressed by the owner of a bronze included in the *K'ao ku t'u*, that its inscription denotes the fourteenth emperor of the Shang-Yin dynasty, because it contains the characters *tsu ting* (**123**, iv 22-3). It is true that the emperor is so named in recognized lists, but these two characters occur on hundreds of bronzes, and mean nothing more distinctive than "Ancestor Ting" (*v. inf.*, p. 21). Among the many attempts that have been made to connect the names on bronzes

with persons mentioned in classical literature, one by Wang Kuo-wei (**167**, vii 11 and 12) seems more plausible than most. The inscription (FIG. 13) occurs on a vessel of the *tui* (or *chiu*) class in the collection of Lo Chên-yü, who reproduces a photograph of it, together with the inscription (**107**, i 27): "Hu of T'êng ventured to design and cause to be made [this *tui* in honour of] his late revered father, to be placed among the symbols of favour conferred by the Ruler of the State, and treasured as a sacral vessel." Wang holds that this Hu must be the Mêng Hu mentioned in the *Li chi* as having been mourned by his nephew, Earl Wên of T'êng (**39**, i 172). Moreover, he surmises that the inscription throws light on the text, inasmuch as the style of both vessel and script appears to belong to the middle of the Chou period, and therefore Earl Wên could not, as one of the commentators declares, have lived under the Shang-Yin. Perhaps more convincing is his further statement that the inscription demonstrates the original form of the character *T'êng*, written with "fire" at the bottom instead of the usual "water." Instances of such essays to correlate inscriptions with extant history might be multiplied indefinitely, but most are barren of tangible result; and it may safely be asserted as an axiom that, if close parallelism be found, probably the inscription is a fake. In short, the clues are lost to most of the cultural indications hidden in these legends, and the only hope of recovering them seems to lie in future scientific excavation.

Excavation, systematically carried out, may disclose geological criteria for the dating of bronzes; and we may at least hope for further light on types of script, styles of decoration, and modes of craftsmanship peculiar to certain localities. Many accepted standards, which through constant reiteration



FIG. 14.



FIG. 15.



FIG. 16.



FIG. 17.

have come to be regarded as established, may prove fallacious. For instance, certain types of script associated with certain types of design and decoration are unfailingly labelled as dating from the Shang-Yin dynasty. A prominent example is the libation or drinking cup *chüeh*, of which the Collection has two (A 38 and 39). The inscription on the first (FIG. 14) comprises two characters, *Fu kuei*, which are raised, not sunk below the surface as are most legends on bronzes. Another inscription of like type (FIG. 15) is that on A 56; it reads: "Son. Ancestor Jên" (the third character being partly obliterated). A third example (FIG. 16) is from the *tui*, A 50: "Ancestor Kuei; Father Ting." Such are generally regarded as typical of the earliest period. But are we justified in labelling as Shang-Yin all seemingly ancient bronzes bearing inscriptions of this type, so long as nothing in the style of their design denies so early an attribution? I think not, though the practice appears to have been followed generally by Chinese critics. Look, for example, at the repository of Shang-Yin inscriptions compiled by Lo Chên-yü (**119**). The class by far the most largely represented—it supplies some 230 inscriptions—is the *chüeh*; yet extant examples of the class are not nearly so numerous as those of several other classes. Again, the *chüeh* class supplies only some 20 items in Tsou An's large collection of Chou inscriptions (**151**). And these two works may be taken as representing the usual methods of attribution. If they were true, the inference is that few *chüeh* were made after the Shang-Yin period; yet surely such inference must be fallacious. Probably what has happened is that the original archaic type has continued till comparatively recent times to be reproduced faithfully as regards both shape of vessel and style of inscription. Moreover, the custom to inscribe the *chüeh* class on the body under the handle, where small space is available, tends to brevity. FIG. 16 belongs to the same archaic style, and it appears to be identical with one reproduced by both Lo Chên-yü (**119**, i 16) and Takata (**144**, iii 4)

among Shang-Yin inscriptions. The vessel which bears it (A 50) is also of a style usually ascribed to that period; yet it offers little evidence of such extreme antiquity. The conclusion to be drawn from the foregoing is that, apart from the copying of excavated bronzes that flourished chiefly from the Sung period onwards, all examples of so-called Shang-Yin types do not actually date from that period; certain of the types persisted under the Chou. FIG. 17 is unquestionably a late reproduction of an archaic inscription. It reads: "Father Kêng. For sacrificial offerings." Apart from the fact that its presence is anachronistic on a vessel (A 40) belonging in style to the last five centuries B.C., examination proves it to have been engraved. And, judging from the fresh edges of the thick layer of patina through which it is cut, it was engraved recently. This opinion finds support in the close resemblance it bears to an inscription published in 1909 among the bronzes of the Tuan Fang Collection (**152**, i 14). Presumably here is exemplified the common practice of adding an inscription to enhance the market value of an uninscribed bronze. Few fakers have the knowledge to invent an archaic inscription likely to pass muster, so one is copied from a published work or an unpublished inked-squeeze, because either is usually more accessible than a genuinely inscribed ancient bronze.

The authenticity of seemingly archaic inscriptions is a constant problem. Many which appear in the leading illustrated catalogues and epigraphic treatises are beyond doubt products of various periods during the last two thousand years. Probably some of these were copied from ancient models when bronze replicas were cast to meet the demands of private collectors, but there are other legends of which the script is archaic in form while the purport is purely topical. I refer to bronzes made to figure in official revivals of ancient rites, many of which are recorded in history. For instance, when during the *chêng-ho* period (1111-1118) the reigning Sung emperor ordered sacrificial ceremonial to be remodelled on the lines of ancient procedure, a scholarly official, named Chai Ju-wên, was put in charge of the necessary preparations which included the manufacture of archaic vessels bearing legends suitable to the occasion. Records of a number of these inscriptions, drafted by Chai in script of archaic form, are published by Sun I-jang, who discloses the disturbing fact that several eminent scholars, regarded as mainstays of epigraphic studies, have mistaken these legends to be real antiques, although Chai made no undue effort to simulate archaic phraseology (**141**). Juan Yüan, for example, includes several in his well-known book as belonging to the Chou (**76**, v 4; vii 14, 15), and furthermore advances one, which really records the cyclical date, A.D. 1114, as evidence that the practice of naming years by cyclical characters was started early in the third century B.C. by Chao Hsiang Wang of the Ch'in State as a subterfuge to avoid the notation according to the royal calendar of the declining Chou, his legitimate suzerain (**76**, vii 14, 15). Relying on Juan's authority and unaware of the true facts, Petrucci reproduces both the inscription and the erroneous theories (**134**, 72-3). Unfortunately he picks out another of these pseudo-archaic inscriptions (*id.*, 74), and takes it to manifest ambitions and superstitions which existed more than thirteen centuries before Chai Ju-wên wrote it to commemorate the pious exercises of a Sung emperor. Petrucci should hardly be criticized for following in the footsteps of an acknowledged expert like Juan Yüan; and I cite these instances to hint at the pitfalls encountered by students of Chinese epigraphy.

The foregoing brief inscriptions (FIGS. 14-17) are alike as to the manner of naming the ancestors. They use the cyclical system which on ancient bronzes and the Honan Finds is applied to the daily calendar in the same way that since about the beginning of our era it serves also to denote the years. Each day has for name a pair of characters, the first taken from a set of ten known as the Celestial Stems, the second from a set of twelve known as the Earthly Branches. Characters from these two sets are combined in rotation, according to their proper order, so as to form sixty different pairs (60 being the least common multiple of 10 and 12), corresponding to a sequence of the same number of days. An ancestor is designated posthumously by the first character of the cyclical date on which he was born. As a means of indicating an individual this is vague, since within the short span of a cycle each of the Ten Stems occurs six times, and the likelihood is that several ancestors must share the same cyclical birth date. Probably the chief signification of these cyclical names is as guides to sacrificial rites. An ancestor, designated by this method, may reasonably be regarded as having a birthday every ten days. The custom being to sacrifice to ancestors on their birthdays, memoranda are needed

of the days on which with propriety sacrifices to them may be performed or vessels cast in their honour. An inscription supporting this surmise is one reproduced above (FIG. 10) as an example of Shang-Yin calligraphy. It reads: "On the lucky first day of the eighth moon, it being the *i-mao* day, the Duke bestowed serfs on Ch'i. Ch'i, to commemorate the event, made in honour of his illustrious father, whose birth fell on an *i* day, this precious sacral vessel for descendants to share." A more striking confirmation may be found in the inscriptions on three bronze knives (FIG. 18) which were dug up south of Pao-ting in Chihli, and soon afterwards, in 1917, bought by Lo Chên-yü. Inked-squeezes of the three are reproduced in **6**, No. 8; **107**, ii 1-3; and **151**, vi 68, 69. (In the first of these works, the upper knife is shown transposed, through some mischance.) The presumption is that the inscriptions (which read from left to right) provided a sort of sacrificial calendar for an ancestral temple. Perhaps the knives served also for cutting up the sacrificial animals. The birthdays of twenty ancestors are here noted by giving the first character of the cyclical date denoting each, and here is an actual demonstration of the contingency, noted above, of several ancestors sharing the same "Stem." Limitations of space forbid any attempt to unravel the intricacies of genealogical

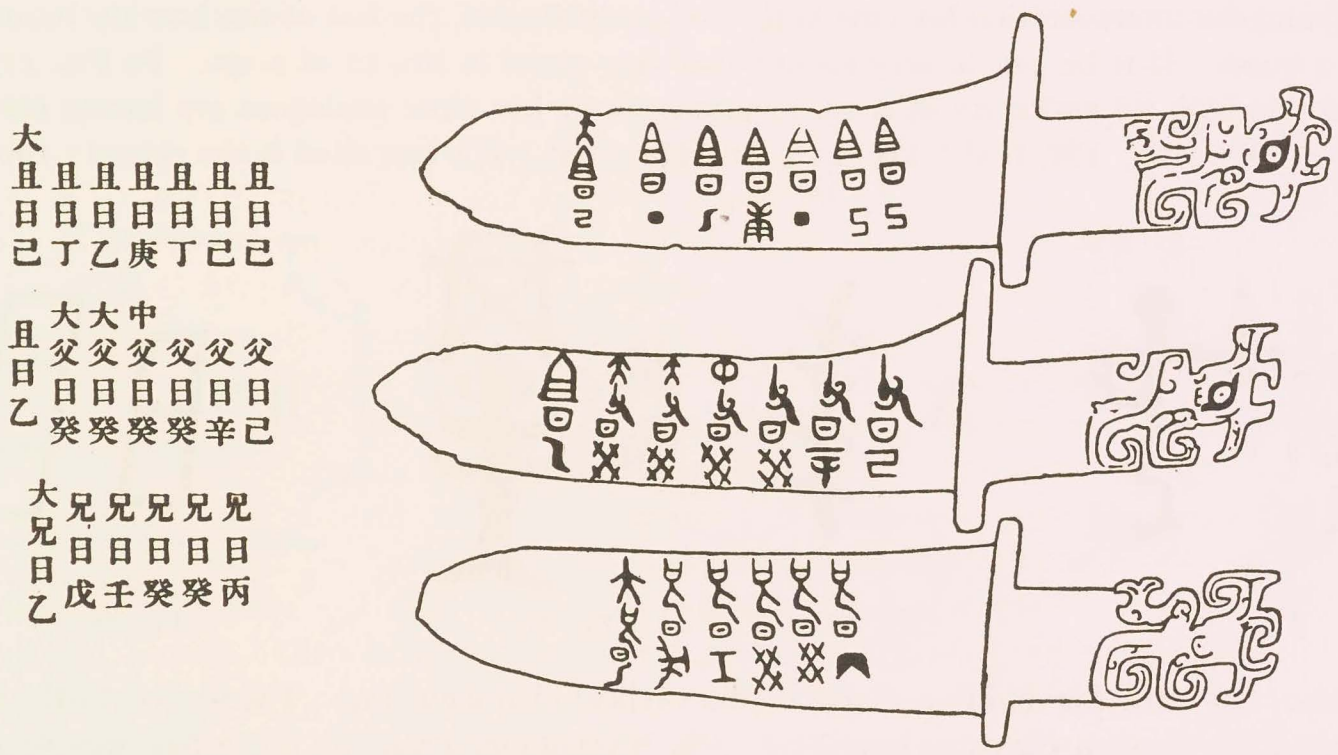


FIG. 18. REDUCED TO SLIGHTLY LESS THAN HALF ACTUAL SIZE.

precedence here displayed. The ultimate ancestor is called *ta tsu*, and after him come seven "ancestors" (*tsu*), followed by two *ta fu*, one *chung fu*, three *fu*, one *ta hsiung*, and five *hsiung*.

Designation of ancestors by the simple and familiar characters of the cycle presented no difficulty to the scribes, but the task of writing names of the living must often have taxed their ingenuity. Nomenclature in ancient China is a complex and imperfectly understood subject, involving a system of taboo, and it cannot be discussed here. Suffice it to say that a man often had many names, and that their currency was by word of mouth, rather than by writing. Uncertainty as to the representation of them in script is exemplified by the fact that often one name may be found written in as many different ways as there are commentaries to the Annals of Lu (*Ch'un ch'iu*). Moreover, for various reasons, some names were deemed unsuited to be set down in writing. In short, the scribes were often driven to fanciful or capricious expedients in writing a man's name, and that is why the decipherment of names is one of the most perplexing problems presented by archaic inscriptions. The difficulties are illustrated by the second (FIG. 11) of the two inscriptions reproduced above as examples of Shang-Yin calligraphy. Following Takata (**143**, iv 5), it is read: "Lü made this for sacrifices to Fu Ting and to be treasured as a sacral vessel." But "Lü" is merely a conjectural equation, based on the surmises first that pictograms of a halberd and chariot are combined here to represent *lü*, the word for a certain army unit, and secondly that the scribe's intention was to write a name of like sound.

Perhaps another consideration entered into his choice of means: the man may have held military command.

An isolated figure of a man shouldering a halberd (FIG. 19) offers an even more difficult conundrum. It comes from the fine *ku* (A 9), which appears to be of great antiquity. A certain well-known inscription resembles it except in so far as it has the point of the halberd turned down, and another element in addition. Alongside the version in the Collection (FIG. 19) I have written four characters, each of which may be held to provide a reasonable interpretation. In support of the first, *fang*, Hopkins suggests that it may denote sacrifice offered to the Spirits of the Four Quarters (**65** (1926), 480); or it may stand, he thinks, for the second character, *fang* (*id.* 481-2). The latter equation would signify "a frontier guard," and so would acceptance of the third character, *shu*, which has at least one other advocate (**99**, iii 2). Both Lo Chên-yü (**119**, i 15) and Takata (**144**, iii 13) read it as the fourth character, *fa*, "to attack." The latter, as well as Wu Ta-ch'êng (**179**, vii 3), recognize the pictogram as proof that the vessel bearing it was cast to commemorate a military achievement.

The next inscription (FIG. 20) is a well-defined figure cast on the inner side of the base of A 10, which belongs to the *ku* class. So far as I am aware, the collections of archaic inscriptions offer no parallel, and the interpretation here made that it stands for *hai*, the last of the Earthly Branches, is merely a guess. If it be *hai*, it may signify that this vessel is No. 12 of a set. To FIG. 21, which occurs inside both lid and body of A 19, several more or less close analogues are known (**49**, ii 24; **119**, i 29; **132**, ii 19; **178**, f. 58; **179**, xviii 11; **176**, i 29). The last cited is the closest; the first is



FIG. 19.



FIG. 20.



FIG. 21.

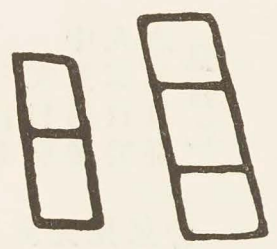


FIG. 22.

like it also, but with the addition above of the cyclical character *ting*. The second to the fifth of these references concern the same inscription, which occurs on a *yu*. So much has been written on the upper of these two characters, a common one on bronzes, that the various arguments cannot be included here. I have adopted the reading *kou fu* given by both Hamada (**49**, ii 24) and Takata (**143**, viii 32-35). The latter suggests that this *kou*, meaning "unite" or sometimes "women's apartments," may on bronzes signify its homophone (written with addition of the "woman" determinative) which means "marriage." The lower figure, construed as a pictogram for *fu*, "bat," may be an ancient instance of the rebus for *fu*, "happiness," so familiar in later works of art. Accordingly we may read "wedded bliss," and regard the vessel as one designed for a marriage ceremony or gift. On the other hand, the upper figure may stand for *kou*, written with determinative No. 162; and thus the inscription would mean merely a general wish for happiness. Furthermore, there is the possibility that the *fu* signified is the name of the sacrifice which calls down blessings from ancestors; when the reading would be: "Fashioned for the *fu* sacrifice." Finally, mention should be made that the rendering "For offering soup" is that given by Wu Jung-kuang in his note (**176**, i 29) on the inscription most closely resembling ours.

The next inscription (FIG. 22) is perhaps the most enigmatic in the Collection. The two figures are cast separately on the *yu*, A 26, that on the left inside the lid, and the other inside the base. Takata reproduces what appear to be these identical figures; he notes that they also are taken from a *yu*, but I have not had access to the book which he names as his source (**143**, i 16). He holds that each is equivalent to *fan*, a reading adopted here for lack of a better. It may be a name. Inked-squeezes from A 26 are reproduced by Tsou An (**151**, v 13), who indexes them both as *jih*, "sun."

Two figures, also from a *yu* and doubtless of the same import, are reproduced by Liu Hsin-yüan (**99**, vi 1), who deciphers the figure on the lid, which resembles that on the lid of A 26, as *jih*, "sun," while he reads the other (unlike ours) as *ching* or *hsing* (the third character in the second column of FIG. 32. But he takes care to add that he cannot tell their meaning).

No account of archaic inscriptions on bronzes should omit mention of the frequently occurring form illustrated in FIG. 23. The Collection happens not to include an example, and the one reproduced here comes from Juan Yüan's famous work (**76**, ii 3), where it is noted as inscribed on a Shang-Yin *chüeh*. Much has been written on the supposed signification of the surrounding frame exemplified by FIG. 23, and also on the structural arrangement of ancient ancestral temples, with which it is said to be correlated. Opinions naturally differ on subjects so imperfectly known, but most agree that this frame probably represents the ground plan of one of the temple buildings, and that its presence on a bronze signifies dedication to ancestor worship. I have chosen FIG. 23 for reproduction not only as a representative example of the surrounding frame, called *ya*, but because it illustrates also a stage in the evolution of the character *chüeh*, an important item in the study of ritual vessels. *Chüeh* is used to denote the class of libation or drinking cup of which the Collection has two examples (A 38 and 39). According to the *Shuo wên* it is a pictogram of a bird, and the vessel it denotes is fashioned in bird

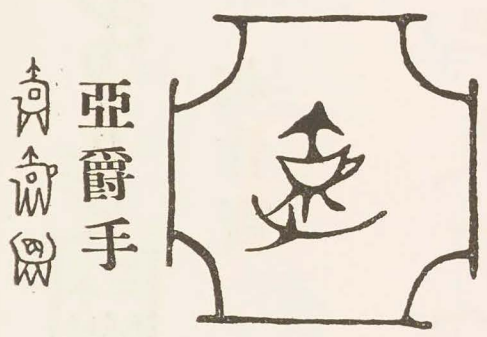


FIG. 23.

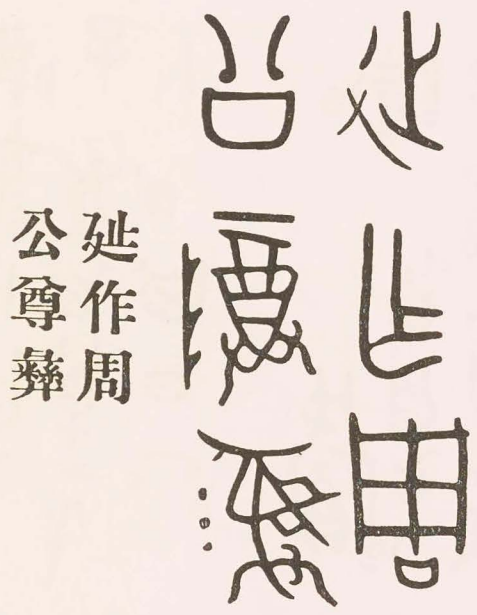


FIG. 24.



FIG. 25.

form because a bird's twittering notes resemble the words *chieh-chieh tsu-tsu*, "sparingly-sparingly enough-enough"—an exhortation to temperance. Whatever credence the latter part of this explanation may claim, there seems truth in the statement that the character is essentially a bird pictogram. The present form of *chüeh* comprises four elements, as may be seen by reference to it as printed in FIG. 23. The two at the top are direct descendants of the original form at an intermediate stage in "Small Seal" script, and, though they are contracted almost beyond recognition, the "eye" remains apparent. Below are two elements which prove to be later additions: that on the left is *ch'ang*, "fragrant spirits," and that on the right *yu*, "hand." Hsü Shên's equation of the upper elements with a bird pictogram is doubtless the re-statement of an old tradition, which but for him would be lost. It finds confirmation, moreover, in certain forms on the Honan Finds, and three of these I have copied in FIG. 23. The problem is unravelled by Lo Chên-yü (**116**, ii 36-7), whose remarks are translated by Hopkins (**65** (1917), 781-3). When these forms of *chüeh* from the Honan Finds are examined, they will be recognized as pictograms of a bird's head with crest, eye, and beak. The crest persists as the capped uprights of the cup, the eye as its handle, and the beak as its feet. Within the surrounding *ya* of FIG. 23 we see a rough picture of the cup, and below it a hand—one of the two elements subsequently added to the character in its final phase.

Hamada mentions (and rejects) a variant explanation of the symbolic intent supposed to have occasioned the form of both the *chüeh* cup and the character used to write its name. The tradition is, he says, that a bird, being able to fly, does not drown; therefore its form serves to warn the bibulous

(**50**, 24). Perhaps this notion, as well as the former, may be merely fancies suited to the didactic tenor commonly assumed by Chinese writers when they turn to moralize on the forgotten past. The pages of the *Po ku t'u lu* (**160**), for instance, are full of similar attempts to explain decorative motives to which the clues are lost. And perhaps, after all, the identity of the *chüeh* cup with a bird may be solely verbal; in other words, the names for the two being of like sound, that for the cup is written with a borrowed bird pictogram—an instance of *chia chieh*, the last of the Six Scripts, similar to that illustrated in FIG. 6 *a*. Nevertheless, there seems reasonable basis for belief in an independent bird origin. It finds support in the form of another character which also may be a relic of ancient sacrificial rites in which birds figured prominently. This is *i*, which occurs more often than any other in inscriptions on bronzes, and is generally associated with *tsun* and often with *pao* (*v.* FIGS. 10, 11, 13, 24, 25, 26, 28, 29, 32, and 36). Now, as may be seen from the present mode of writing the character, the recognized explanation of its structure, following the *Shuo wên*, is that it is composed of four elements: a " pig's snout " at the top, " rice " and a " hank of thread " in the middle, and two " hands " below. Certain ancient forms are known (*v. e.g.* FIGS. 26 and 36) which seem to justify this analysis, and it is the view accepted by Takata, whose treatise should be consulted (**143**, lxix 22-35). On the other hand, far more numerous are variants of another type which appears to be composed

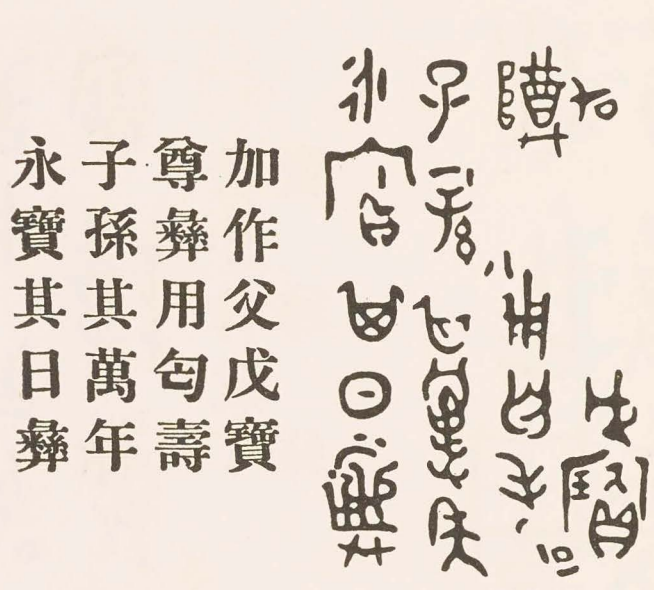


FIG. 26.

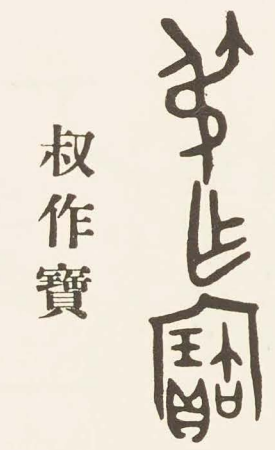


FIG. 27.

of pictograms of a bird, held by two hands, and grains of rice dropping from its beak (*v.* especially FIG. 25). Wu Ta-ch'êng gives some fifty examples of this bird-like type, and quotes the opinion of Yang I-sun, a nineteenth-century writer, that it depicts two hands grasping a fowl complete with comb, wings, tail, and spur (**180**, xiii 3). Moreover, Lo Chên-yü notes concerning two examples from the Honan Finds: " Two hands holding a cock, agreeing with ancient forms on bronzes; but what the significance of this is we cannot tell " (**116**, ii 37). Hopkins also subscribes to this interpretation (**62**, 457-8), and I prefer to do so too.

Those familiar with the native catalogues are well aware that the word *i* is often used to name certain bronzes, but that the usage is far from uniform or specific. Thus Lü Ta-lin includes under the term twenty-one objects belonging to nine different categories (**123**, iv 5-29); and in the *Po ku t'u lu* it is used for the smaller examples of the *tui* class. Subsequent writers generally follow the latter work. Wang Kuo-wei discusses the subject (**167**, iii 14 and 15), and concludes that *i* used in this specific sense is a misnomer. The presence of the character on vessels of various sorts indicates its collective purport in ancient times, and so does the text of the *Chou li* (*v.* **10**, i 445, 472-6), which names the Six Vessels (*liu i*).

For sake of brevity the two characters *tsun i* are rendered " sacral vessel " in the translations of these inscriptions. But this fails to convey their full significance. The ancient form of *tsun* is generally composed of three pictograms: a wine flask, two hands, and *fou*, the rotated figure for " mountain " which has been cited above (FIG. 5 *d*) to illustrate the fifth of the Six Scripts. Sometimes *tsun* is used

to denote a wine vessel, as the example in FIG. 40 shows. The argument may be advanced that because wine vessels are important in sacrificial rites, this character came to signify "exalted." But it seems more likely to have been originally equivalent to *ling*, "a high hill," and hence to have had the sense of "noble," "honoured," associated with a general notion of loftiness. Or it may have been an earlier scription of *tsun*, "a high hill," written with the "mountain" determinative, which was borrowed to stand for its homophone, "a wine jar," written with the "earth" determinative.

The inscriptions next to be considered are representative of a numerous type. They record the name of the person who caused the vessel to be cast and the name of the ancestor or culture-hero to whom it is dedicated. Thus FIG. 24, on the dish (*p'an*) A 64, reads: "Yen (or Ch'an) made in honour of Chou Kung this sacral vessel." Perhaps therefore the dish belongs to a sacrificial set devoted to his ancestral temple by a descendant of the famous figure in Chinese history to whom the four-handled *tui* (PLATES XIII and XIV) is also dedicated (FIG. 32). FIG. 25 reads: "Kao Chung made in honour of Fu Ting this precious sacral vessel." Judging from the picture, text, and inscription in **4**, ix 9, the vessel (A 8) which bears this inscription must be the same as that included in the catalogue of the imperial collection. It is there labelled as "The Ku Chung *tsun*

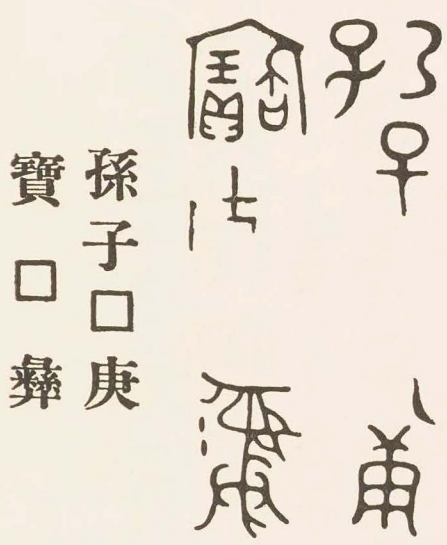


FIG. 28.

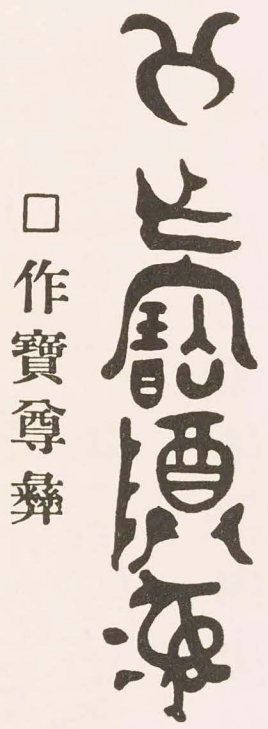


FIG. 29.

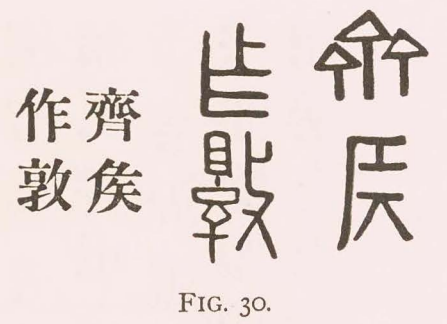


FIG. 30.

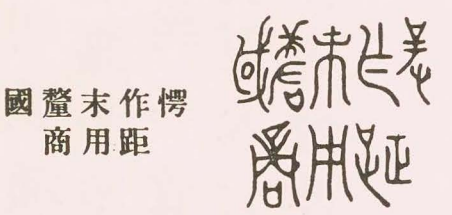


FIG. 31.

of the Chou period," owing to an erroneous decipherment, such as occurs often in the *Hsi ch'ing ku chien*. Here we have a chance of testing the catalogue's reliability as a work of reference, and we find the decorative detail represented with remarkable fidelity in the picture, while the reproduction of the inscription is far from accurate, though it purports to be the facsimile of an inked-squeeze. The explanatory text also provides a sample of the rest of the work, inasmuch as it strains the limits of probability in attempting historical identifications (*v. inf.*, p. 54).

The next inscription occurs on both lid and body of A 27-29, and the two copies are reproduced here together, because, though each is partly obliterated by corrosion, they mutually complete the legend, which is as follows: "Chia made in honour of Fu Wu this precious sacral vessel. May the use of it bring him longevity, and may his descendants for a myriad years continue to treasure it and perform with it his birthday rites." A noteworthy point is the marked difference between the two forms of *i* as written in the second column and at the end. It illustrates a favourite vagary of ancient scribes in giving variety to characters repeated in a short inscription. FIG. 27 occurs inside both lid and neck of A 31. It reads: "Shu made this precious [sacral vessel]." Another inscription, likewise repeated, is almost obliterated on the body of A 24, but enough remains on the lid (FIG. 28) for the decipherment: "May descendants of [Fu] Kêng treasure this [sacral] vessel." In brevity and style it belongs to the Shang-Yin type. The next (FIG. 29) differs markedly from the other inscriptions here reproduced, though it follows the common archaic formula of a name followed by the words:

"made this precious sacral vessel." Here the name cannot be deciphered with certainty; but it may be "Kung." The calligraphy lacks features which distinguish archaic script or good copies thereof, and I would date it as post-Ch'in, not merely because it is badly done, but because mannerisms peculiar to the early period are absent. Moreover, the style of the vessel (A 34) accords with a late date. FIG. 30 is also a freakish affair from the calligraphic standpoint. Two characters occur on each of the handles of the *tui* (or *chiu*) which, though of impressive form, is not a work of high technical achievement (PLATE XXXVI). The words are: "The Marquis of Ch'i made this *tui*." As to style, the characters are difficult to classify; they conform neither to "Small Seal" nor *li shu*. Probably they should be regarded as a late variety of *ku wên*.

FIG. 31 gives rise to several perplexing problems. First is the fact that it is essentially the same as a well-known inscription reproduced in many catalogues (*e.g.*, **40** (Metal Section), f. 93; **76**, viii 21; **151**, vi 120; **177**, ii (1) 31; and **179**, xxiv 7). The latter, inlaid with gold, occurs on a small bronze

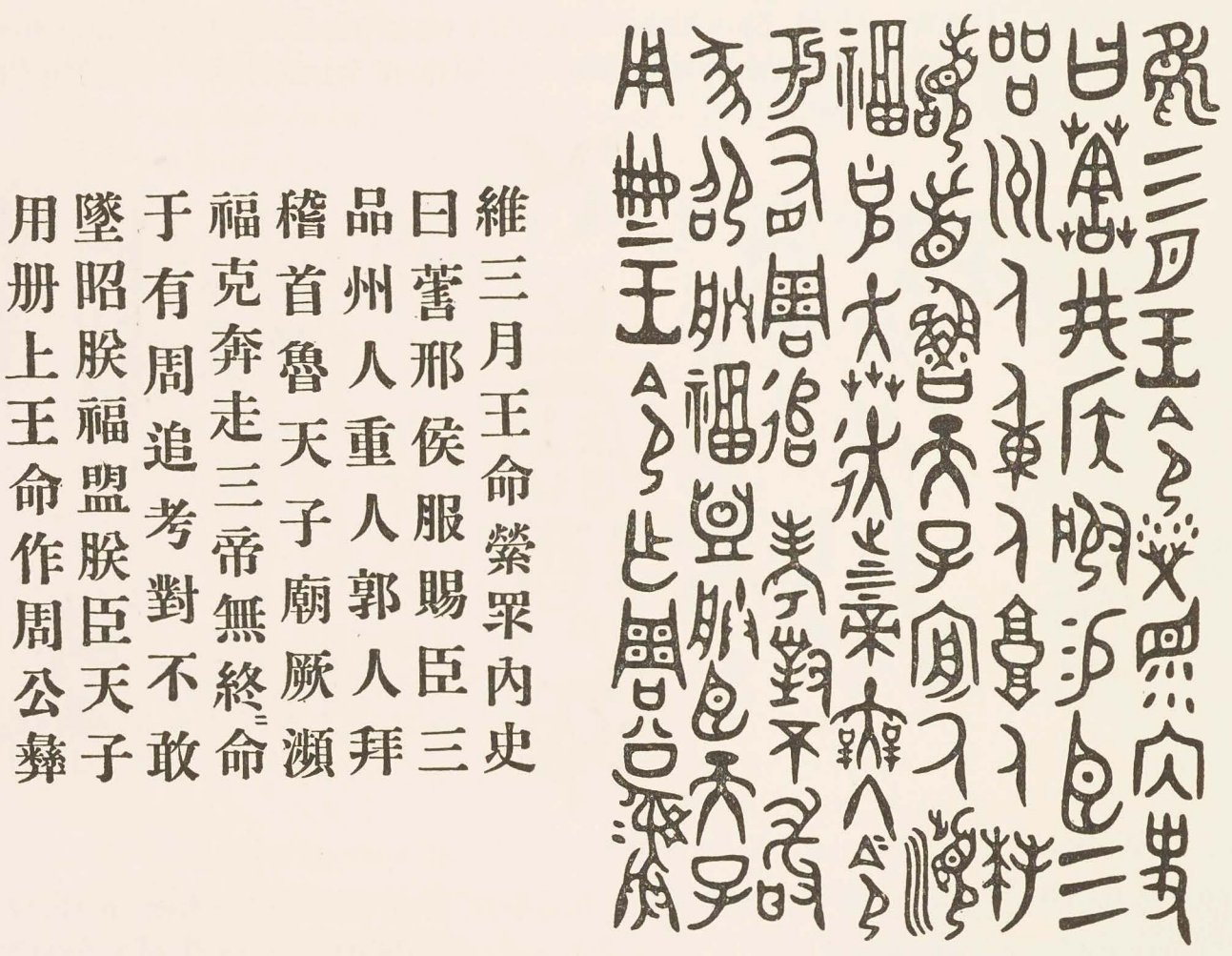


FIG. 32.

object which remained unique in archaeological experience till recently, when another was dug up in the north-east of China. Inked-squeezes of both are reproduced in **151**, vi 120, but unfortunately the inscription on the new find is illegible. Opinions, as expressed by the Brothers Fêng and by Juan Yüan, agree that the object is the tip of a bow to serve for attachment of the string. Relying on this identification, they turn to a passage in the *History of the Contending States* (*Chan kuo ts'ê*) for aid in translating the inscription, and they find there the names of four famous bows (or archers) capable of shooting an arrow 600 paces. The last of these bows is called *chü lai*. But the inscription has the words *chü mo*, and the latter character, as Juan remarks, is too clearly defined to be read as *lai*, nor can it be taken as borrowed (*chia chieh*) for *lai*, since the sounds are so dissimilar. If we accept this passage as throwing light on the inscription, a possible rendering is: "O made this tip for a *chü* [*lai*] bow to be used in the service of the Shang State." The Brothers Fêng hold that "Shang Kuo" means the Shang-Yin dynasty, arguing from a supposed analogy in the *Book of Odes*, where the Chou dynasty is called "Chou Kuo." But judging from the style of the script, which approximates "Small Seal," Juan's explanation seems more feasible that "Shang Kuo" means the Sung State, the rulers of which claimed direct descent from the Shang-Yin dynasty. He gives examples of the name "Shang"

applied to the Sung. The Sung State was not extinguished till 285 B.C., so this explanation is consistent with a style of script which, apart from other considerations, would be assigned to the latter part of the last millennium B.C. The next problem is to account for the presence of this inscription on the spear or halberd head (*k'uei*) in the Collection (A 152). Assuming that the above rendering is correct, the inscription is incongruous elsewhere than on a bow fitting. Moreover, knowing that the inscription may easily be copied from a number of accessible works, the first thought to occur is suspicion of a fake, especially in view of the strangely close resemblance between the two inscriptions. Accordingly I spent some hours examining the weapon and came to the conclusion, for reasons too many to be detailed here, that it is of great age and cast by the *cire perdue* process and that the inscription is contemporary. One point must be mentioned, however, as leading to that conclusion; it is that the manner in which the characters of our inscription vary from those published is incompatible with slavish copying by a faker. Furthermore, the legend justifies an interpretation appropriate to both a bow tip and this weapon alike; for the character *chü*, as written here, is interchangeable with another which has the "hand" determinative, instead of the "foot," and means "to resist," "to repulse." Accordingly, the translation is: "O made this point for a weapon of resistance to be used in the service of the Shang State." The foregoing argument is lengthy, but the giving of so much space to it seems warranted if this inscription in the Collection be shown to solve a riddle that has mystified a number of Chinese critics.

The well preserved inscription of 69 characters (FIG. 32) on the noble four-handled *tui* (PLATES XIII and XIV) is unquestionably the most important in the Collection. The beauty of the script and the documentary content entitle it to rank among the aristocracy of epigraphy. At present it is little known, since the vessel was dug up but recently, and, so far as I am aware, only one Chinese book (**147**) takes cognisance of it, and then merely to note several of its rarer characters separately. Before that was published, Hopkins in 1923 delivered a paper at the Centenary Celebrations of the Royal Asiatic Society giving a decipherment and translation (**64**). While preparing this Catalogue I have had the great advantage of help also from Mr. Takata Tadasuke and Mr. Liu Pao-tz'ŭ, both of whom most kindly sent me detailed notes on the inscription. As regards decipherment, the opinions of these three eminent authorities show few discrepancies, but on crucial questions of translation they differ substantially. Unfortunately limitations of space forbid a full account of their views, nor can I include more than a few of my own notes. As the foregoing remarks suggest, the chief difficulty here is one of translation, a common experience when dealing with archaic inscriptions containing phrases other than the commonly occurring formulas. Before a reasonable rendering can be arrived at, classical literature and epigraphic collections must be searched for likely clues. Then comes the task of choosing among them appropriate parallels, and it demands a knowledge of ancient Chinese institutions and local criteria of which few records survive. Hence interpretation of the terse legends inscribed on bronzes often is largely guesswork, varying according to personal proclivities, as proved by the fact that eminent experts seldom agree. From data which I have collected, at least four translations of this inscription might be made, all essentially different in their purport; yet each may be supported with valid arguments. I will give two: the first being a patchwork affair much of which I owe to valuable suggestions from my learned collaborators, and the second Mr. Takata's version. The first runs thus: "In the third month Jung and the Minister of the Interior proclaimed the royal decree: 'Hsia, Marquis of Hsing, in recognition of your services, We bestow on you the people of the three regions, Chou, Chung, and K'uo, to be your subjects.' [The Marquis] bowed his head [to his hands, and then] to the ground. In the Temple at Lu, which is like that of the Son of Heaven, he took part in the sacrifices that bring blessings, and diligently performed the rites to the Three Royal Ancestors. [He said:] 'Unceasingly to the end of my days shall I [strive to deserve] this grant from the House of Chou. Mindful [of the merit] of my forbear, I respond to [and extol the royal favour], and dare not let it come to naught. Wherefore I manifest the happiness bestowed, and covenant with these my [new] subjects.' The Son of Heaven caused a brevet of investiture to be drafted; and [the Marquis], in order to pay befitting honour to the royal charge, made this vessel in dedication to Chou Kung."

From the notes gathered together I will pick out those which seem essential to an understanding of the foregoing. As commonly happens, the key to the inscription is a character which cannot be rendered with certainty. It occurs second in the second column, and, so far as I am aware, no other example of this form is known. I have read it as a name, pronounced Hsia, that being the sound of a plant name current in Hunan which is written with what is probably the modern equivalent of this archaic form (*v. K'ang-hsi Dict.*). The first Marquis of Hsing was the fifth son of Chou Kung, to whom this bronze is dedicated. His fief was situated near the present city of Shun-tê in the south of Chihli, and some 170 miles north-west of the capital of the State of Lu. Later (about 658 B.C.) Hsing was moved to a site nearly 100 miles nearer Lu, in order to escape the attacks of barbarian tribes (**94**, v 133); and twenty-four years afterwards the State was extinguished (**94**, v 195). Supposing that the recipient of the grant of additional territory commemorated by this inscription were the first Marquis of Hsing, he would be the brother of Po-chin, who ruled over Lu in place of his father, Chou Kung. Chou Kung was the first to be enfeoffed as Marquis of Lu when his brother, King Wu, vanquished the forces of Yin and established himself as the first emperor of the Chou dynasty. Chou Kung remained at the imperial court as one of the two ministers who governed the empire, and therefore never lived at Lu. After the death of King Wu, he acted as regent during the minority of King Ch'êng, his nephew. Then it was that he sent his eldest son, Po-chin, to rule in place of him at Lu (**25**, iv 92-3). At the death of Chou Kung, King Ch'êng conferred special privileges on the Marquises of Lu (*v.* **25**, iv 100), and these included the assumption of certain royal prerogatives, notably as regards sacrificial rites. In recognition of Chou Kung's services, he ordained that imperial honours should be rendered to him in the ancestral temple at Lu (**39**, i 729, ii 350-2, and **25**, iv 100). Moreover, in the *Li chi* (**39**, i 733) there is the passage: "The Grand Temple [in which was the tablet of Chou Kung] resembled the *ming t'ang* (sacred temple) of the Son of Heaven."

These data seem to afford sufficient justification for the reading "Temple at Lu, which is like that of the Son of Heaven," and also for the supposition that a Marquis of Hsing should go to Lu for the purpose of announcing to the spirits of his ancestors the honour conferred on him by the King; for at Lu was the chief ancestral temple of his family. I have given the phrase "sacrifices that bring blessings" as a translation of the character *fu*, which in the inscription denotes certain sacrifices to ancestors. They were called *fu* "blessings," because their purpose was to invoke ancestors to confer benefits on the living. Much might be written on the signification of the two characters *san ti*, which I have rendered "Three Royal Ancestors." The Kings T'ai, Chi, and Wên were worshipped as founders of the House of Chou when the dynasty was established on the throne (**94**, iii 319); and the same three were invoked when Chou Kung offered his own life to save that of the sick king, his brother (**94**, iii 352-3 and **25**, iv 89-91). Other trinities include Hou Chi and Chou Kung (*v.* **94**, iv 622-624). Note must also be made that perhaps the second character of the term *san ti* should be transcribed with the addition of determinative No. 113; for the *ti* of the inscription may stand for the name of the *ti* sacrifices which were important periodic ceremonies performed in the ancestral temple. When following the recent death of a family chief, the ceremony served to elevate him among the ranks of his exalted forerunners; and at all times it was dedicated to specially honoured ancestors (*v.* **125**, 249-251). According to a passage of the *Li chi*, the Chou dynasty included the legendary Ti K'u, great-great-grandson of the Yellow Emperor, as their remotest ancestor while performing the *ti* sacrifices (**39**, ii 258). The inscription, as translated above, infers that the rites in the ancestral temple at Lu were performed in imitation of the royal procedure. If, therefore, the inscription can be proved to be a genuine document emanating from the first Marquis of Hsing or one of his immediate successors, it disposes of the contention that the privilege of sharing the royal prerogatives was never conferred on the rulers of Lu, but was usurped by them during the time of the Marquis Hsi, 658-626 B.C. (*v.* **94**, iv 611 and **39**, ii 352). The Annals of Lu (*Ch'un ch'iu*) record that this Marquis in 650 performed the *ti* sacrifice in the Grand Temple, when he placed the tablet of a former marquis's wife in the ancestral shrine (**94**, v 150-1). So far as present knowledge goes, the style of the script and composition is typical of the early part of the Chou period. The chronology of Chou Kung and his sons is somewhat vague, and the first Marquis of Hsing may have lived early or late in the eleventh century B.C. (**25**, iii 30).

But there is the possibility that some other Marquis of Hsing is the subject of the inscription, and, as noted above, the State continued in existence till 634 B.C.

Mr. Takata's version (communicated in Chinese) is translated as follows: "In the third month Jung and the Minister of the Interior proclaimed the royal decree: 'To exalt the Marquis of Hsing in recognition of his services, We bestow on him the people of the three regions, Chou, Chung and K'uo, to be his subjects.' [The Marquis] bowed his head [to his hands, and then] to the ground. The Heir Apparent of Lu with his presence perfected to the full the joy occasioned by this act of bounty, while rites to the *san ti* were accorded in order to magnify the [celestial] mandate held by the House of Chou. [The Marquis said:] 'Reflecting on my filial duty, I dare not let aught impair [the royal grant]. Wherefore, I manifest the happiness bestowed, and covenant with my subjects [to govern faithfully].' The Heir Apparent [of Lu] caused to be made this record, worthily to commemorate the royal charge, and this vessel to honour Chou Kung."

The foregoing should be supplemented with several remarks. First, instead of reading "Hsia" a name, the strange character is taken to be a verb meaning to "exalt" the Marquis or "proclaim his merit," and it is equated with the word *chieh* having that sense. Next the anthropomorphic character, occurring in the fourth and seventh columns, is read as *ta* (*v.* FIG. 7 *h*), which is the same as *t'ai*. *T'ai tzŭ* is the term for an heir apparent to the throne, and it is supposed here to allude to

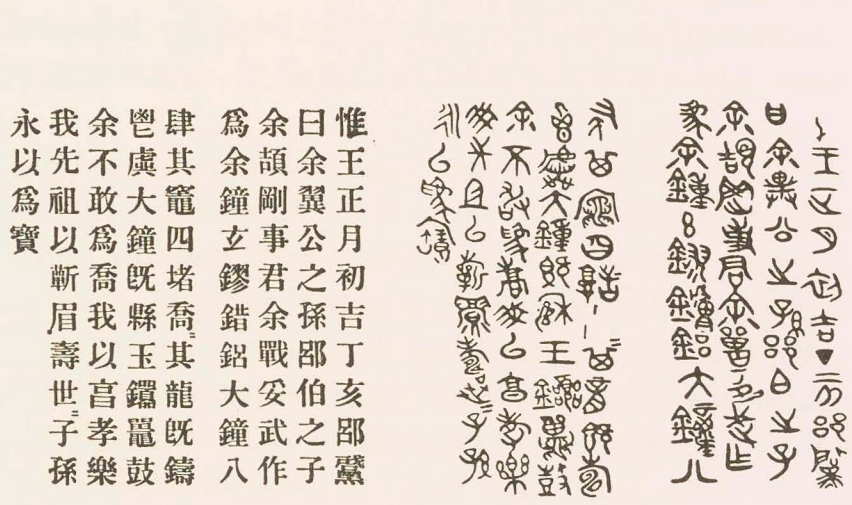


FIG. 33.



FIG. 34.

Po-chin, and to be thus applied to him because he was the acting ruler of Lu in place of his father, Chou Kung, as explained above. Instead of reading the rare form which follows as *miao*, "temple," Mr. Takata takes it to be an archaic equivalent of *chou*, "to perfect," "to complete." He can offer no explanation of the characters which I transcribe as *san ti*, nor does he regard as a separate character the form last but one in the fifth column. He accepts it as part of the preceding *wu*, which he takes to mean "magnify." The fact should be mentioned that Mr. Takata had at his disposal only an inked-squeeze, which at this spot is somewhat indistinct. Scrutiny of the bronze itself proves beyond doubt the presence of repetition marks which are not apparent in an inked-squeeze. They follow the form read as *chung*, "end." I take the second *chung*, thus indicated, as an ellipsis for the term *chung shên*, "life's end," which frequently occurs in classical literature.

A Marquis of Hsing is mentioned on other bronzes; for example, on two in the imperial collection (**4**, viii 33-4; xiii 10). Both of these accord with the four-handled *tui* as regards style of decoration and script, so far as may be judged from the illustrations to the catalogue. The former bears a long legend describing a hunting expedition in which the Marquis was in attendance on the King. Perhaps some such services occasioned the grant commemorated by our inscription.

The inscription of eighty-six characters, reproduced actual size in FIG. 33, is famous both for its unusually minute and accomplished calligraphy and for the many interesting and puzzling problems it presents. So small and delicately formed is the script that its beauty may hardly be recognized without a lens. Perhaps the only way to gain a full appreciation of the marvellous dexterity displayed

is to copy it, as I have done for FIG. 33. And I would venture to commend this means to those who wish to learn the varying mannerisms and artistry of archaic Chinese calligraphy. The legend is one which has been put forward to prove that the brush was used as a writing tool long before the Ch'in period, and there are other features of technique to be discussed later (p. 39). For reasons aforesaid it has figured prominently in most epigraphic treatises since 1862, when the bell bearing it, together with eleven others similarly inscribed and belonging to the same set, were excavated from a river bank in Shansi. Six of the chief among these works (**99**, ix 27-29; **132**, i 1-9; **144**, iv 2; **167**, xviii 4, 5; **170**, 5; and **179**, i 7-11) together devote to it some seventeen pages of explanatory text; and no two agree on all disputable points. They are at variance even as to the main purport of the legend. P'an Tsu-yin holds that celebration of a victory occasioned the casting of the set from metal got by melting captured arms, and that an allusion may be found to the ceremony of smearing drums with blood of sacrificial victims. On the other hand, Wu Ta-ch'êng declares that the motive is to commemorate services rendered to his prince in the hunting field by the noble who caused the bells to be made. These and many other published arguments cannot be explored here; some will be discussed in the second volume where the bell itself will be described. The translation which I offer is made by fitting together what seem to be the most reasonable among the opinions expressed by the five writers cited above. Here is another instance of obscurity concerning names, due partly to lack of clues and partly to the prevailing practice of writing strange forms outside the normal repertory. We cannot tell with certainty even the noble's name, or to which feudal State he belonged. The character that stands for the latter has been read alternatively Lü or Chü 呂 莒, and it may actually be neither.

The tentative translation is: "On the first day of the King's first month, it being the *ting hai* day, I, Ch'i of Lü, declared that I, a grandson of Duke Yi and son of the Earl of Lü, having served the Prince diligently in restoring peace by warlike prowess, have made of dark and fine bronze these bells: eight large of full tone for sacrificial rites to my ancestors, and four small of lesser tone [for invoking the spirits]. Proudly, proudly the posts and bars rear their dragon heads, now their casting is completed; and the big bells, when suspended, shall harmonize their notes with tinklings of the sonorous jades and beats upon the alligator-skin drums. I dare not exalt myself; but to my ancestors I shall make filial offerings accompanied with music from these bells, whereby to implore the bushy eyebrows of old age. May generations and generations of my descendants continue to use and treasure them."

A note is called for concerning the first character of column six, here read as *ch'ang*, "a bow-case." The phrase containing it apparently describes the stands on which the bells are hung, and it may be regarded as parallel to one in the *Li chi* (**39**, i 739). These stands were decorated at the top with dragons, and "bow-case" may be used here in a figurative sense to signify the shape of the uppermost transverse bar, possibly so formed, as Wu Ta-ch'êng suggests, to symbolize valour.

The inscription (FIG. 34) on the sword A 155 is difficult to translate. Evidently it is applicable to weapons other than swords; for it occurs on a halberd or dagger-axe (*ko*) of the Tuan Fang Collection (**152**, ii 21), and one partly like it on another *ko* (**177**, ii (1) 86). The words "King of Yen," of FIG. 34, or "Marquis of Yen," appear also on several bronzes cited by Takata (**143**, xx 24-5). There is known another sword inscribed "King of Yen," but the inked-squeeze reproduced in *Chou chin wên ts'un*, at the end of the last volume, is only partly legible. Inked-squeezes taken from four *ko* and four spear-heads, all inscribed "King of Yen" and also apparently the name "Huan," are reproduced by Liu Hsin-yüan (**99**, x 21, 22, 37, and 38) who gives a note on the locality of Yen. Probably its site is in Honan, near K'ai-fêng.

The foregoing examples, though not numerous, well illustrate both the evolution of archaic script and the chief motives of legends on ancient bronzes. We have seen primitive pictographic forms, such as are generally attributed to the Shang-Yin period, and also styles of writing current under the Chou. The two mainsprings of ancient Chinese religious and social institutions—ancestor worship and the feudal system—have been manifested: the first by laconic dedications to the family shrine, followed later by ampler invocations to ancestors combined with exhortations to descendants not to

fail in filial piety; the second by records of favours conferred by suzerain lords and received befittingly by their vassals. Beyond this range the present article cannot go, except to include two examples (FIGS. 35 and 36) chosen for special reasons. FIG. 35 displays certain features of archaic script, and at the same time exemplifies a motive the frequent occurrence of which on bronzes and the Honan Finds confirms impressions gathered from ancient literature that hunting largely preoccupied the ruling classes of ancient China. Sport and food were not their sole aims; sacrificial rites demanded huge supplies of victims. These two copies of the same inscription, one on the lid and the other on the body of a Shang-Yin *tsun*, are published in Juan Yüan's well-known work (**76**, i 20, 21). The legend occurs again on a so-called Shang-Yin *tsun*, of which the cover is lost (**150**, i 7), but arranged somewhat differently and lacking the repetition marks; and again on a *yu* in one of the Berlin State Museums. Professor Otto Kümmel reproduces photographs of the latter vessel and its inscription (**89**, vi 273-4). He tells me that he considers the vessel not to be of great age. Perhaps we may regard one or all of these inscriptions as reproductions of an ancient prototype. The legend briefly records a royal hunt and the dedication to an ancestor. Probably a noble had the vessel cast for his family shrine to commemorate the honour of having attended on the king during the expedition. In the decipherment I follow Takata (**143**, xc 25; xciii 11; and **144**, vii A, 29) except as regards the reading

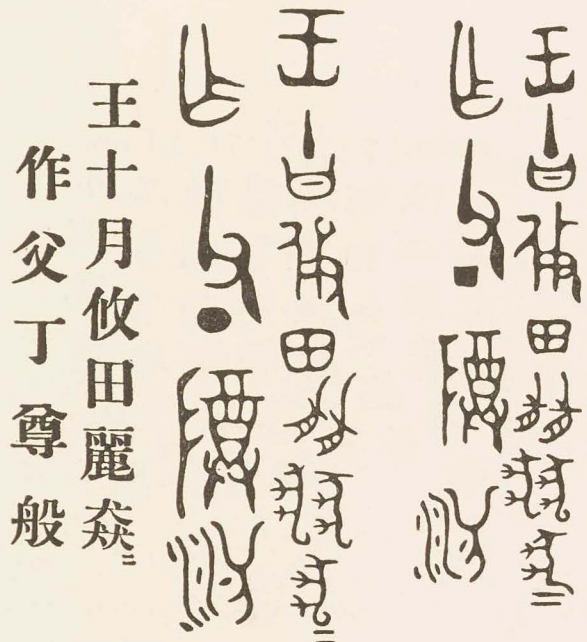


FIG. 35.

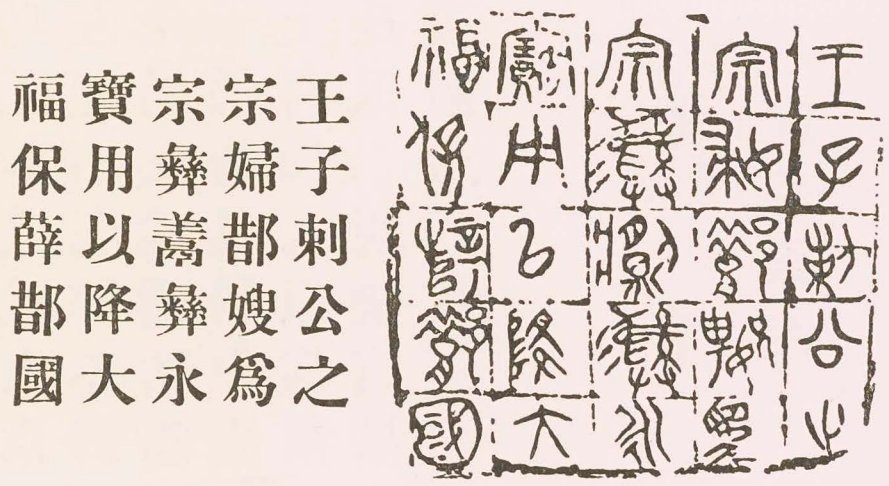


FIG. 36.

of the last character, which is that of Juan Yüan. The translation is: "At the place where the King hunted in the tenth moon the deer were plentiful and fleet. This sacral vessel is made in honour of Fu Ting." The repeated group of three running dogs affords a good illustration of a common form of device invented by the scribes to convey the sense of plurality, and here it has the added signification of rapid motion. But sometimes the device is used to give a diminutive meaning. Moreover, the presentment of these two copies side by side demonstrates the variations that often occur when an inscription is duplicated. Vagaries of scribes are too numerous to be detailed here, but mention should be made of the curious practices of running two or more characters into one, and of dividing one into two. Characters turned upside-down are not rare, and there are inscriptions written in the early Greek βουστροφηδόν manner, but in vertical columns.

Another fancy is to inscribe the characters within squares. FIG. 36 is an instance of this; it is included here chiefly because it exemplifies a class of motive not yet mentioned and also a mode of technique to be discussed later. The translation is: "The Lady of Hsi, wife of the King's son, Duke La, made this boiling pot as a sacral vessel to be treasured and used eternally, thereby to bring down and ensure great blessings to the States of Hsieh and Hsi." This inscription occurs on a number of different vessels (*v.* p. 39), and the surmise seems reasonable that they were cast to mark the occasion of a royal wedding.

We have seen how in the third century B.C. destruction of the ancient order brought about the

final phase in the evolution of archaic script. With the death of feudalism ended also the cult of ancestors according to the ancient rites. While " Small Seal " became the uniform standard of writing throughout the country, countless semi-independent social units, each with its family shrine, traditions, and ceremonial, lost their identity through being merged into the homogeneous empire ruled by the despotic First Ch'in Emperor. The calling in and melting down of all ritual bronze vessels was doubtless as potent a factor in this revolutionary process as the more notorious Burning of the Books. Inscriptions on bronzes seem to have changed abruptly in tenor as well as in their form of script. Few dating from the short-lived Ch'in dynasty have survived and they are on weights and measures, but plenty of inscribed Han objects, including vessels, are known. The legends on the latter may be studied in collections such as the *Liang Han chin shih chi* (**174**). Gone are the picturesque dedications to family ancestral shrines and records of royal favours, and in their place are prosaic statements naming the maker, the date, and sometimes the capacity, serial number, or destination of the inscribed objects. The date is denoted by the cyclical characters for the year (a custom that began about the middle of the Han period), or by the reign-period (*nien hao*). A few brief dedications to ancestors remain; but often it is a wish for prosperity to the living and their descendants. The inscription (FIG. 37) on the lamp (A 90 and 91) exemplifies a common Han type. It reads: " May [the owner of this lamp] have his due of sons and grandsons. Good luck." There appear to have been three characters

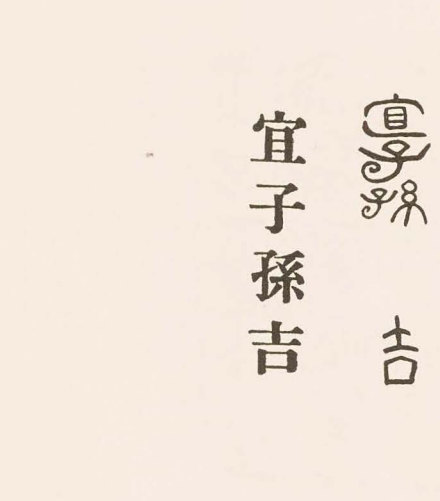


FIG. 37.

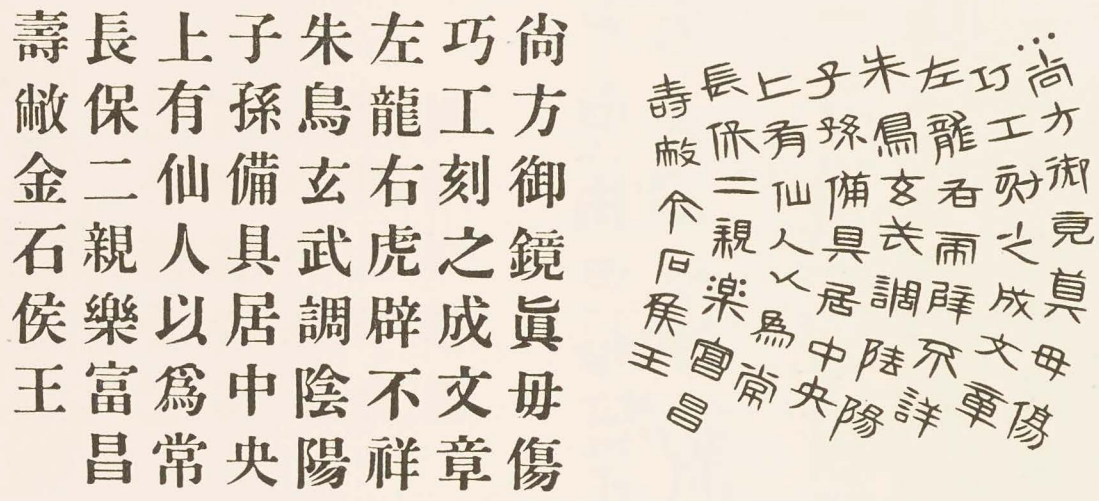


FIG. 38.

inscribed on the opposite side to correspond to these, but they are nearly obliterated. Doubtless they were "Good luck; great good luck," as represented in the example reproduced by Juan Yüan (**76**, ix 26).

A fitting ending to this article is provided by the inscription encircling a mirror which will be represented in the second volume. By comparison with other mirrors which are dated, it may be assigned to the beginning of our era. For sake of convenience I have cut the inscription into eight parts, corresponding to the sentences, and placed them here side by side (FIG. 38). The style of writing is *li shu*, the stage at which Chinese script shows a sharp cleavage from the traditions of two thousand years and more, and starts on the career which it has followed with little change to the present day. This inscription serves, moreover, to manifest the new world of thought and imagery that came into being with the destruction of feudalism and the extension of foreign contacts. It reads: " This gift mirror, made at the Shang Fang, is true and without blemish; its decoration is engraved with skilful craftsmanship. On the left the Dragon, and on the right the Tiger ward off ill-luck; the Scarlet Bird and the Sombre Tortoise combine the *yin* and *yang* principles harmoniously. The Twelve Branches, all complete, occupy the centre; and the necessary Fairies are present. May joy, wealth, and prosperity long be ensured to both Parents. May their lives outlast metal and stone, and may their lot be like that of nobles and kings."

Explanation of the various allusions contained in this inscription might fill several pages, but this is not the place to attempt it. A few brief remarks must suffice. The Shang Fang is the name of a factory in which things were made for the Court (*v.* **25**, iii 477). The Four Animals symbolize the quarters of the universe, and probably the Twelve Branches (already described in relation to cyclical

notation) have here a like signification. I have rendered the term *hsien jên* as "Fairies," because the figures on mirrors which are so inscribed have elfin form. The term hints at the mysterious Otherworld which preoccupied Chinese minds during the several centuries before and after the beginning of our era, and has remained to the present day the motive of a voluminous literature and the inspiration of countless poets, painters, and craftsmen. It is a land of transcendent beauty inhabited by beings who have escaped the common fate. As early as the fourth century B.C. expeditions had been sent forth to seek the Isles of the Blest by rulers of two coastal States, and the quest was renewed by the First Ch'in Emperor and his successors of the Han dynasty. By such means they hoped to find the Elixir of Life which would enable them to join the ranks of the *hsien jên* or immortals. These quests and the beliefs manifested in the vast fairy-lore of Taoism have been explored to some extent in an article by the writer (*Folk-Lore*, 1919, pp. 35-62). No more can be said here than to emphasize the significance of FIG. 38 as an inscription exemplifying new impulses in Chinese life and thought which synchronized with the adoption of a new style of script.

TECHNIQUE OF BRONZE CASTING

A STUDY of this subject involves two main considerations: material and craftsmanship. Apart from the often-quoted passage in the *Chou li*, to be discussed later, ancient sources of information concerning the metallic composition of bronze are meagre. This is not surprising when we remember the general lack of knowledge concerning metals and the reticence invariably observed by craftsmen who are naturally unwilling to disclose their secrets. The obscurity is increased by conditions of speech and script in feudal China: a multiple terminology due to local peculiarities, an unrestrained use of borrowed (*chia chieh*) characters, and the scribes' proclivity to erratic variants at a time when no uniformity in writing prevailed. Hence classical texts fail to provide definite criteria; and, even if the substances originally denoted by the ancient names might be identified, such an inquiry could hardly be expected to yield tangible results. Nor do inscriptions on bronzes enlighten us. The eight examples chosen by Takata (**144**, vii B, 21-2), as representative of those containing allusions to metals, afford nothing more precise than the vague terms written on a certain bell of the *po* type, as follows: " For the casting of this precious *po*, there have been selected of auspicious metal some ' light-coloured copper ' and some ' dark-red ore '." For reasons given above, probably these renderings do not convey the original meanings of the terms, although they seem to be the best obtainable from definitions in ancient dictionaries.

Speculations based on such flimsy foundations would serve no practical purpose, but mention should be made of the proportions laid down in the section of the *Chou li* which is entitled *K'ao kung chi*. Objects cast in bronze are here classified under six headings, and the alloy appropriate for each group is specified in parts of copper to tin respectively, as follows: for cauldrons and bells, 5 to 1; for axes, 4 to 1; for halberds and spears, 3 to 1; for swords and knives 2 to 1; for erasing knives and arrows, 3 to 2; and for mirrors and specula, equal parts. These are the proportions as translated by Biot (**10**, ii 491-2), and the text does not seem to admit of another rendering. Yet it has been read differently, so as to increase the proportion of copper. In respect of the first, for instance, the parts of copper and tin are put at 6 and 1 respectively, as has been noted elsewhere (**187**, 23). The question is whether these figures given in the *Chou li* should be regarded as traditional data, based on actual practice, or as theoretical standards formulated by the author. The main body of the book is suspected of being a Han attempt to construct a Utopian scheme of administration, and the section *K'ao kung chi* may be even later than the Han. The archaic terminology is retained in this section, as naturally it would be if the aim of the author were to claim classical sanction for a new system of social reform. Thus, copper is called *chin* (" metal ") in accordance with ancient usage. Undoubtedly this was the earliest name, and it was given because copper was looked upon as the metal *par excellence*. The fact reflects the prominent place occupied by bronze in the life of ancient China. Analysis of many genuine pre-Ch'in objects alone can settle the question whether this list of alloys represents actual standards which governed the craft during the Chou period. No such analysis has yet been published, and therefore no final conclusion is possible at present. One suspicious item in the list calls, however, for comment. Examination of bronze mirrors, the products of other races, proves that from the earliest times the fact was recognized that the maximum reflecting power is obtainable from an alloy which contains approximately two parts of copper to one of tin. This practical point must surely have been discovered by Chinese craftsmen soon after they began to cast bronze mirrors. The actual date is a problem to be discussed in the second volume, but probably it was during the latter part of the Chou period. Certainly bronze mirrors existed about the beginning of the Former Han.

If we take another fact derived from analysis of bronze objects discovered in other parts of the

world as a clue to the present problem, we may foretell that lead will be found to be one of the chief constituents of alloys used during the Chinese feudal period. Certain bronzes, belonging to ancient Mediterranean civilizations, present qualities which they share with many of the finest examples from China, and the former are known to contain lead in proportions ranging from about 3 to 11 per cent. On this point, note should be made that the character *hsi*, translated in the passage from the *K'ao kung chi* as " tin," was anciently used also as a term for lead. Zinc is another of the white metals which probably were confused with tin, and we may expect to find also antimony, nickel, and arsenic when specimens of ancient Chinese bronze come to be analysed. In short, the likelihood is that the alloys used in feudal China conformed to no uniform standard, but varied according to the accidental chances of supply and the rough empirical knowledge of craftsmen. Lack of exact knowledge concerning metals must have precluded anything approaching modern scientific methods. Another factor likely to complicate estimates based on metallic composition is the frequency with which bronze objects were melted down and the metal cast afresh. Several historic occasions are mentioned later (p. 40) when all kinds of objects made of bronze were collected throughout the country and melted together, generally for the minting of coins. Apart from such well-known instances, the constant re-casting of bronze must have gone on everywhere at all times; and there seems no reason, for example, why a pseudo-archaic vessel made, say under the Sung, should not be composed of the actual metal cast by a craftsman of feudal China some two thousand years before. These are reasons why the mere analysis of alloys is not likely to provide definite criteria as to the age and provenance of bronzes.

Information concerning the methods used by ancient Chinese casters can be gained only from scrutiny of their handiwork. No contemporary account of technical processes survives, nor is it likely that one ever existed. The craftsmen themselves, even had they been willing to impart their secrets, surely could not have set them down in writing. Later books, which discuss the arts and crafts, generally evidence the same lack of practical knowledge which is too often apparent in the writings of Western critics. Passages translated by J. C. Ferguson (**42**) and H. A. Giles exhibit the usual vague amateurism and fanciful theorization, and are to be regarded more as literary curiosities than aids to the understanding of technique. In the latter passage, taken from the thirteenth-century work *Tung t'ien ch'ing lu*, occurs an account of the *cire perdue* process (**46**, 293-4). Whether it actually represents the ancient tradition, as the author claims, matters little; for it is merely a general description such as would be written by an observer unaware of the practical problems of the process. Thus, it omits the means used in the making of the wax model and the core, the positions of runners and air vents, and the temperature of the mould at pouring. Nor is anything more illuminative likely to be forthcoming from Chinese literature; I have spent much time in fruitless search.

The most striking material features of ancient Chinese bronzes are smoothness of surface, absence of flaws or porosity, and sharp definition of decorative detail. Such are attainable with alloys containing lead, which have greater fluidity and lower melting point than simple mixtures of copper and tin; and therefore I ventured the guess that analysis of ancient Chinese bronzes will show a rich lead content. For similar reasons, the likelihood is that zinc may sometimes be found. But metallic composition is not the only important factor; success depends also on the choice of other materials, and most of all on the skill of the craftsman. Bronze casting does not demand elaborate apparatus; the highest degree of accomplishment may be reached with the simplest means—a fact recognizable from conditions obtaining in some present-day workshops in which the finest work is produced. The personal factor is what counts; modern science and mechanical invention alone are of little avail. Makers of ancient Chinese bronzes owed their mastery of the medium to that aptitude for technical achievement which many centuries later gave world supremacy to Chinese potters.

Though the bronzes themselves offer clues to the methods used by ancient Chinese craftsmen in the preparation of models and moulds, they cannot inform us on the less important subject of furnaces and means of conveying the molten metal to the moulds. Still, the earliest accounts of bronze casting in Europe may be taken to provide a probable picture, since they demonstrate conditions which, by reason of their simplicity, surely differed little from those encountered by the first bronze casters.

The main principles have, in fact, been retained to the present day. In one kind of furnace the metal is contained in a crucible; in another it lies in a chamber which is apart from but communicates with the firespace by means of a "bridge" over which pass flames and gases from the burning fuel. By the first method the molten metal is poured from the crucible into the mould; by the second it runs down the sloping hearth of the melting chamber to one vent or more through which it is allowed to escape and then flow along channels to the mould. Combinations of both principles were sometimes used; an instance may be seen in the eleventh century account by the priest and monk Theophilus where he describes the founding of bells (*De Diversis Artibus*, lxxxv). In his *Pirotechnia*, which appeared in 1540, Biringuccio gives lucid illustrated descriptions of various furnaces then in use; and Benvenuto Cellini, twenty-eight years later, published a detailed account of the kind of flame furnace used by him for large works (*Trattati*, On Sculpture, iv). A survey of the subject is contained in Hermann Lüer's excellent monograph, *Technik der Bronzeplastik* (pp. 5 *seq.*). From such criteria may be obtained a fairly clear idea of the means which presumably were used by the ancient Chinese to melt their bronze and convey it to the mould.

As regards the more obscure topic of moulds, again we must turn to Western practice for analogies which may offer enlightenment. Moulds, known from both Western and Far Eastern sources, fall into three categories:

(1) Permanent moulds of bronze, iron, clay, stone, and various compositions. Perhaps also wood faced with clay.

(2) Temporary piece-moulds of loamy sand.

(3) Temporary moulds formed through the agency of a wax model which is melted out and afterwards replaced with molten metal—the *cire perdue* process.

The first may be dismissed briefly, because it is employed chiefly for the simpler solid objects such as coins, mirrors, weapons, tools for tillage, and buckles. Many Chinese archaeological works, notably those on coins, picture and describe examples of this category; yet, so far as I know, the only book entirely devoted to the subject is the recent one by Lo Chên-yü (**106**). The author calls attention to ancient bronze matrices for the moulding of clay moulds, used no doubt on account of the metal's superior durability. On the flat bed of the bronze matrix or mould is fashioned in relief a rough model of one side of the object to be cast. When the actual mould for the casting is required, the needful clay (or composition) is pressed into the bronze matrix which is surrounded with a raised rim. Thus is produced half a mould, bearing a hollow imprint of the model which stands out in relief upon the bronze matrix. Unless the other side of object to be cast be flat, there must, of course, be a second bronze matrix for the moulding of the opposing half of the clay mould. While still moist the clay may be touched up and decoration applied. Then it is sun-dried or baked in a kiln. Lo Chên-yü claims to have discovered the fact that many ancient moulds, formerly regarded as cut from natural stone, are really made of a composition called *shih-kao*. In Giles' *Chinese-English Dictionary* (No. 9964) the term is defined as "ground gypsun; plaster of Paris"; but powdered stoneware or suitable sand must be included as an ingredient in order that the moulds may stand the heat of molten bronze. This discovery of Lo Chên-yü confirms the belief, based on certain features of their bronzes, that the ancient Chinese used at times a substance that shrinks little and is capable of moulding delicately the finest detail.

Moulds belonging to the first category cannot, of course, be used for single castings of objects which have under-cut relief, nor are they so suitable for the reproduction of fine detail as those of the other two categories. The question is whether they were ever used for direct castings of hollow vessels. Certain Western writers affirm that they were, and apparently they jump to this conclusion because they observe the presence of seams. Those with practical experience are well aware that seams often may be found on *cire perdue* castings, as will be explained later. Among many ancient Chinese vessels which I have examined, there is not one which appears to be cast in moulds by the direct

method. I have seen, however, a solid dummy vessel of the *ho* class, presumably intended for burial with the dead, which is cast in a two-piece mould.

Apart from greater density of the casts, owing to ready absorption of gases evolved from the molten metal, economy of time and labour is the sole advantage to be claimed for sand casting as compared with the *cire perdue* method. It is a weighty consideration in modern commercial production, yet it is not likely to have influenced the craftsmen of ancient China, except in respect of certain simple objects of general use which were required in large numbers. On this point an interesting fact to note is the name of the class of metal workers specified in the *K'ao kung chi* as dealing with bronze objects containing lesser proportions of copper, *viz.*, erasing knives, arrow-heads, mirrors, and specula. The name is *chu* (Giles' *Dict.*, No. 2575), "to pound earth," which is fully appropriate to the sand process. So far as I am aware, this significance has never been suggested; but the observations of scholars, ignorant of technicalities, are of little value when they comment on passages such as this. Discrimination between simple castings from permanent moulds and those from sand is hardly possible while full knowledge of the materials used is lacking. The question to what extent, if any, the sand method was practised in ancient China must remain unanswered. All that can be said is that probably it was used for certain simple, flat objects.

The familiar tradition that the more elaborate bronzes were always cast *à cire perdue* is amply verified by scrutiny of specimens. Distinctive are the traces of holes at more or less regular intervals. These are occasioned by the need to hold the core in place when the wax is melted out. Pins or dowels, which pass through core, wax model, and mould, are the means generally used; but sometimes the purpose is served by junctions between core and mould through holes previously made in the wax. In the finest bronzes detection of the perforated spots is often difficult and sometimes impossible, the reason being that similar metal is used for both pins and vessel. At the time of pouring the pins become partly fused with the molten mass, and afterwards their projecting ends are cut away. These remarks apply especially to plain or partly decorated objects. The craftsman avoids so far as possible transfixion through a decorated part; but, when the bronze is covered with ornament, interference is inevitable, and the continuity of the design must be restored by cutting. Hence traces left by pins are more easily detected in fully decorated pieces which are well preserved; for differences in quality may be recognized between these small patches of engraved ornament and the general cast surface. Moreover, detection is aided by the fact that as a rule Chinese craftsmen refrain from touching up their castings except at points which demand tool-work. The use of iron pins in the later castings may be inferred from the presence of plugs and an occasional pin found imbedded in the bronze. In certain instances it may afford a valuable clue to the date of a bronze. Probably iron was first known in China about the fifth century B.C., the exact time cannot be stated. Iron, having a higher melting point than bronze, pins of it offer greater security in the holding of the core. Moreover, the appearance of a bronze is thereby little impaired; for, after casting, the pins are easily extracted and replaced with bronze plugs made from the runners. These plugs evidently taper and are driven in from the outside; for they are found to fit less accurately on the inner surface. Another clue to recognition of a bronze cast by the *cire perdue* process is the quality of surface characteristic of wax.

Many considerations are involved in determining the procedure which has been followed to produce by the *cire perdue* process a certain bronze under examination. Information concerning the mode of making the core and the relative positions of the runners and air vents is of practical interest, if only it were obtainable. A discussion of these and numberless other technical points would be too lengthy for the present purpose, and attention must be restricted to the making of the wax model. Put briefly, two methods are used to fashion the wax: one by hand and the other by moulding, and these are often combined. The first may be preceded by the careful building up a core shaped like the object to be cast, but smaller to the extent of its thickness. The core is then painted with several coats of melted wax until it is covered with a layer of the required thickness. Upon the wax the craftsman works until he has produced an exact model of the object to be cast. Or the wax model may be fashioned independently of a core, which is filled in at the time when the wax model is encased with the

mould. Whichever course be followed, care must be taken that the wax is approximately the same thickness throughout; otherwise the bronze, which replaces it, will crack or shrink in places, owing to differences in the rate of contraction on cooling. This method entails, of course, total loss of time and labour should the cast be unsuccessful.

The second method allows of the process being repeated without destruction of the original model which may be of any material suited to plastic art, *e.g.*, bronze, clay, pottery, or wood. There is in the Victoria and Albert Museum a pottery vessel shaped like a favourite type of the *hu* class of bronzes. Apparently it has been used as a model from which piece moulds have been taken; for it bears on its surface scores left by the point of a knife, and these scores run along the lines that would naturally be followed in trimming the edges of the pieces. Moreover, traces still remain of some substance, like shellac, which presumably was painted over the vessel in order to facilitate removal of the mould. Here mention should be made of the theory that the rare fragments of what is known as "white Yin pottery" belong to models used in the casting of bronzes. Whatever the material of the model, the procedure followed in moulding from it is the same. A layer of clay or some composition resembling our plaster of Paris, such as Lo Chên-yü describes, is applied to the model in sections, and afterwards removed. If clay be used, it must be coated at once with the wax; for clay shrinks much on drying. If plaster be used, its surface must be greased or oiled before the application of wax. The first coat of melted wax is applied with a soft brush in order to ensure perfect contact devoid of air pockets. Next the edges of the wax are trimmed, and the sections are then assembled and bound together. However carefully this stage in the process be performed, failure to bring the sections into correct apposition often results. Thus are produced the seams and breaks in the continuity of ornament which have led certain writers to deny the *cire perdue* process in respect of bronzes displaying such flaws. The effects of faulty apposition may be seen in several bronzes of the Collection; they are apparent in PLATE VII, which shows plainly the line of junction between two of the three sections used to mould the wax model for this bronze, especially in respect of the three raised fillets encircling the upper part. Similar faults may be seen in PLATE XXXVI, and here there is evidence also that the sections of the mould sagged after removal from the model. Sagging, twisting, and shrinkage of mould sections are dangers which attend this method. Melted wax is poured into the hollow mould, composed of the assembled sections lined with the first coat of wax and bound round outside. The mould is turned about until a layer of required thickness has solidified, when the residue of wax is poured away. An innermost coat of pitch may be applied in like manner, in order to strengthen the model and facilitate the subsequent melting out. Removal of the mould leaves a wax model which is dealt with in the same way as one fashioned by hand. Another method, suited to objects devoid of ornament likely to hold air pockets, is to pour melted wax into the space between the assembled mould sections and the core, reeds having first been fitted to serve as air vents.

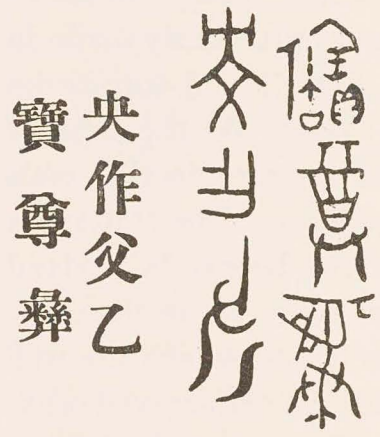


FIG. 39.

The wax model being complete, the next step is to attach runners and air vents fashioned in wax. The levels at which the runners are joined to the model depend on whether the descending or ascending system of pouring is used. Each has advantages: the former needs a simpler arrangement of runners, the latter minimizes the chances of air locks as the molten metal rises in the mould. Probably the ancient Chinese varied the system according to circumstances. The composition of the first layers of the mould with which the model is encased, and the mode of applying these layers are important factors in producing the smooth surface and sharp definition of detail characteristic of ancient Chinese bronzes. Essential ingredients are some highly refractory substance, such as fire brick, and a binding vehicle, both finely powdered. Probably several thin layers of the compound were painted on, each being allowed to dry before the next was applied, and the outer layers of the mould were of coarser material.

Modes of applying ornament call for longer discussion than is feasible here. Suffice it to say that

the ancient Chinese make frequent use of dies for imprinting either the wax model direct or thin slips of wax which afterwards are affixed to the model. Doubtless the dies are of various materials, but I have certain knowledge of clay only. A noticeable feature of the Chinese use of die-stamped ornament is lack of effort to join the repeats accurately or to make good by hand the shortcomings inseparable from a mechanical process. While this technique, as applied to decoration, is often easily recognizable, its use for inscriptions is less obvious, and probably less common. Evidence seems to uphold the surmise that dies are used only when the need is to repeat an inscription many times. An interesting example is the set of twelve bells, one of which belongs to the Collection (pp. 29, 30) and presents a well-preserved copy (FIG. 33) of the inscription common to all. Fortunately a collection of thirteen inked-squeezes, taken from the set, is available for scrutiny (**151**, i 11-19). That reproduced on f. 15 *recto* comes from the bell in the Collection. Though the bells themselves vary in size, the inscription appears in two sizes only. The craftsman elected to have one pair of dies which would fit fairly well the spaces available on the larger bells (ff. 11 A and B, 12, 13, 14, 17, 19), and a smaller pair for the rest (ff. 15, 16, 18). But it was only a makeshift arrangement, as may be seen on looking at an imprint of the larger pair of dies (f. 19). A corner of the die projected beyond the bell edge, with the result that the character at the foot of the fifth column is lost. The same character is almost lost on the smallest bell, for a similar reason (*v.* f. 18 *verso*). Another inscription which appears on many different objects is that reproduced in FIG. 36. Inked-squeezes are reproduced in several of the repositories of archaic script (*v. e.g.*, **151**, ii 37, 38; iii 56-58; iv 9; v 41, 42 and **179**, vi 8, 9; xii 19, 20; xiv 19, 20; xvi 18). The twelve copies of the inscription represented in **151**, iii 56-58 and **179**, xii 19, 20 seem to be stamped with the same die. When an inscription is repeated twice only, as on both lid and body of a vessel, the general practice is not to use a die. A photograph of a clay die, bearing in relief the reversed characters copied in Fig. 39, is reproduced by Lo Chên-yü (**105**, 33). It reads: "Yang made this precious sacral vessel [in honour of] Fu I." Finally, the rare occurrence of ancient engraved inscriptions is to be noted. Probably the graver is resorted to only in special circumstances. Juan Yüan (**76**, viii 15) cites the instance of a halberd (*ko*) engraved in the eighth century B.C. by the ruler of Sung in order to commemorate a visit paid to the royal court by his father who had made the weapon after his return. The author testifies to the genuineness of this engraved inscription by stating that both he and another, whom he names, were present when the *ko* was excavated. An example (FIG. 17) of an archaic inscription copied by this means has been described, and beyond doubt most of the engraved inscriptions to be found on bronzes are imitations.

A few words should be added on the technique of inlaying, since many objects in the Collection are inlaid. Examination of these, notably A 99 and 100, proves that strips and thin plaques of gold or silver were hammered into cavities with undercut sides and roughened beds. When malachite (A 32) and turquoise (A 147) were inlaid, some adhesive substance must have been used. Rostovtzeff is doubtless right in tracing to foreign influence the perfecting under the Han of gold and silver inlay work; but his statement that the art was unknown to feudal China seems hardly warranted (**135**, 61-67). Before such a denial of generally accepted notions can be sustained, numerous attributions of inlaid objects to the Chou must be proved erroneous. One example is the well-known inscription which provides a parallel to FIG. 31. As noted above (p. 26), it is inlaid with gold, and, unless it be a fake, it is certainly pre-Ch'in. Native tradition traces the inlaying of bronzes back to the Shang-Yin dynasty. This is another problem which awaits scientific excavation to find the solution.

CLASSES AND USES OF ANCIENT VESSELS

THE problems connoted by this heading have preoccupied many Chinese scholars during the last two thousand years, and still they remain to some extent unsolved. It is a subject which has claimed attention beyond the confines of antiquarianism and academic research; for often it has become one of practical importance when emperors, in accordance with the national instinct for following classical precedent, have decreed a return to the ceremonial rites of antiquity. Two kinds of criteria are needed in reviving the past: written records and material relics. Of the former only fragments survive, and they have suffered at the hands of transcribers, editors, and wilful falsifiers.

Still more violent vicissitudes have overtaken the bronze relics of feudal China. The great disaster that befell them at the time of the Burning of the Books is somewhat obscured in history by the exaggerated prominence given by resentful scholars to the loss of ancient literature. For instance, the *Shih chi*, written in the second century B.C., hardly notices the destruction of bronzes, although it was one of the chief measures taken in the preceding century to break continuity with the former régime. The First Ch'in Emperor, so the passage runs, "collected all weapons (*ping*) throughout the empire, assembled them at Hsien-yang, and melted them to cast bells, stands for bells, and twelve bronze men each weighing 1000 *shih*" (*v.* **25**, ii 134-5). From this one would infer that the Emperor's purpose was solely to disarm the people, and thus lessen chances of insurrection and local quarrels. Yet undoubtedly bronze vessels shared destruction with the weapons. Evidence to that effect is the recorded scarcity of ancient bronzes under the Han—a scarcity that caused finds of hidden bronzes to be chronicled as events of national importance. Moreover, the author of the *Later Han History* amplified "weapons" to "weapons and vessels" (*ping ch'i*) in his account, and, though he wrote nearly four hundred years later than Ssŭ-ma Ch'ien, no doubt he had well-grounded tradition to justify him (*v.* **132**, Preface, f. 1). In other early writings the story is told of the melting down of these mementoes of the past, because they were regarded by the First Ch'in Emperor as dangers to the unity of his newly established empire. As time went on, buried bronzes came to light as the result of floods, landslides, well-digging, tillage, and grave-robbing. The metal was always sought after for the casting of cash, and, apart from the activities of illegitimate coiners, occasions are recorded when all bronze objects throughout the country were gathered in to the government mint. In 590 the Sui dynasty melted down bronzes captured from the vanquished Ch'ên, and in 955 an imperial edict commanded an official collection of all things made of bronze except certain exempted categories among which ancient vessels were not included. Then in 1126 the Chin sacked Pien-ching, the Sung capital. Some of the bronzes among the booty which they took away were bought back by private barter and returned to the Sung imperial collection (**164**, 224-5), but probably most were melted down in obedience to an edict in 1158 of the Chin emperor ordering destruction of ancient vessels captured from the Liao and Sung. In 1136 bronze objects were requisitioned within the territory governed by the Southern Sung, and twenty-two years later the proceeds of another requisition, together with 1500 bronzes from the palace, provided more than three million pounds of metal for the mint (*v.* **132**, Preface, ff. 1, 2).

The foregoing are instances of organized destruction on a large scale. Often in country districts and during periods of turmoil the market price of the material must have exceeded that of the vessels as objects of antiquarian interest. In short, as the result of official and unofficial melting down only a fraction of the bronzes recovered from the ground can have survived for long. Therefore

there must generally have been a lack of actual specimens available for the study of the subject, and on many of the frequent occasions when emperors ordered a revival of ancient ceremonial the ingenuity of the officials concerned must have been severely taxed to reconstruct the appropriate vessels. Evidence of their ignorance and of the fanciful expedients to which they were driven is to be seen in the tenth-century work, *Illustrations to the Three Rituals* (*San li t'u*, **127**). This is supposed to reproduce much from previous works under the same title, one of which was compiled by Chêng Hsüan, the famous Confucian commentator of the second century. He it was who explained the term *hsi tsun* (**94**, v 625) as a wine vessel on which was outlined the figure of a phœnix in motion, and the truth that it denoted one fashioned in the form of a sacrifical animal was not known until A.D. 230 when an ox-shaped vessel was excavated (**160**, vii 6). The series of ritual objects pictured in this work (**127**, xii-xiv) differ substantially from those now regarded as genuine pre-Ch'in relics. For our present purpose the importance of these illustrations lies in the fact that they and their forerunners are known to have served as models for the casting of bronzes. Actual examples as well as more or less remote descendants of the pseudo-antiques thus fabricated doubtless survived for many centuries and set up false standards, the consequences of which are hard to calculate. The situation is aptly described in the *Po ku t'u lu*: "Vessels of the Three Dynasties suffered at the extinction of culture under the Ch'in, when civilized institutions were utterly swept away. Scholars of later times, who knew the names but not the actual vessels, let speculation take the place of reality. Errors begat errors, and each through reiteration gained strength so that it came to be regarded as an unassailable truth" (**160**, vii 9). Though this passage appeared as early as 1125 in a work renowned as a great classic of Chinese archaeology, the fictitious presentments, contained in such works as the *San li t'u*, have continued to figure in native encyclopaedias to the present day. The fact seems strange, and so does the indiscriminate copying of these pictures by Western writers.

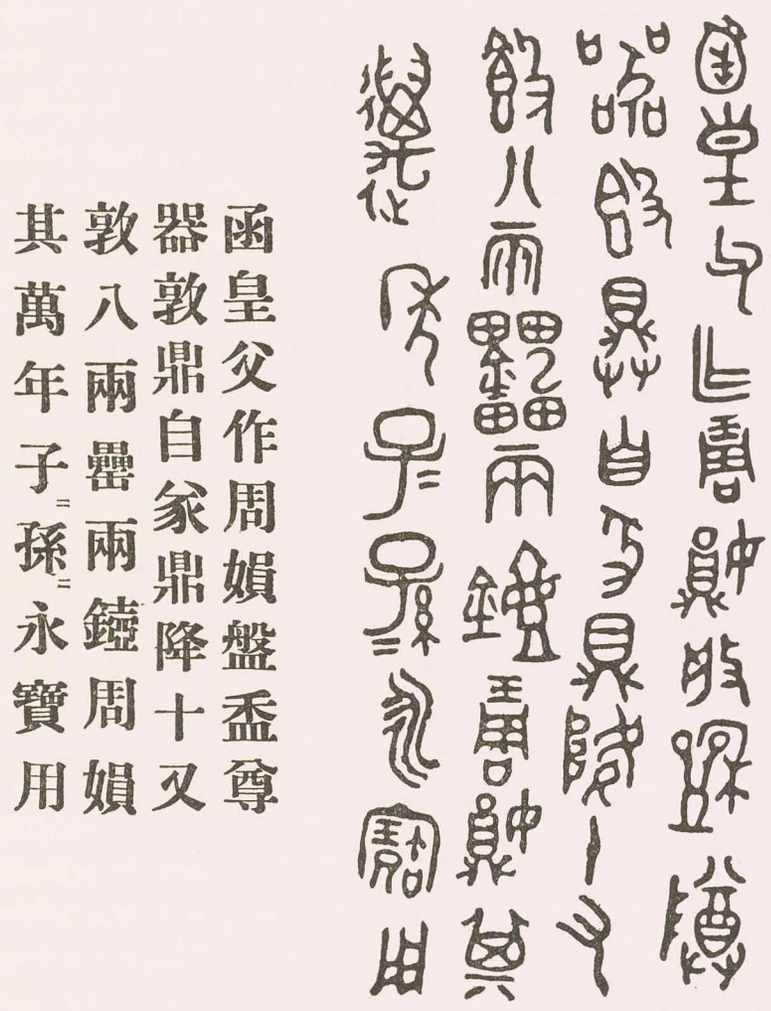


FIG. 40.

A better understanding of ancient bronzes began later under the Sung. Several monarchs of that dynasty encouraged a classical renaissance, and the attention of officials throughout the empire was directed to the discovery and preservation of ancient objects. An imperial collection of bronzes existed as early as 1051, as is known from a record concerning certain bells and cauldrons, and it is said to have contained in 1107 more than five hundred pieces. Within the next ten years it must have increased vastly, if the recorded total of more than ten thousand be trustworthy (**164**, 223). Probably the figures are much exaggerated, yet they offer some measure of the zeal exercised in the collection of bronzes. The quest continued with unabated ardour when the Sung built up afresh an imperial collection in the southern capital to which they had retreated before the conquering Chin.

The school of archaeology which came into being and flourished as part of the Sung renaissance left a fine body of literature. Some of the works, relating chiefly to epigraphy, have been noticed above (pp. 3, 4). Of more immediate interest are the three illustrated catalogues (**5**, **123**, and **160**), which have been accepted as authoritative standards by almost all subsequent writers. While paying due tribute to the discernment displayed in these works, the fact is to be noted that they contain many

errors—probably more than our present knowledge allows us to recognize. Mistaken classifications and unnecessary plurality of names are among the most prominent. The difficulties that beset the pioneer cataloguers of bronzes must have been immense. Their task involved the correlation of numerous different types with the corrupt and fragmentary relics of classical literature. In respect of only some of the vessels were clues obtainable from names inscribed upon them. Thus were identified the *ting, li, yen, fu, an, p'an, i, hu,* and *ho* with a fair degree of certainty; but this source of help was lacking in respect of the *yu, tou, lei, ku, chih, chio,* and *chia*. The cataloguers were therefore often obliged to seek information elsewhere, but seldom with satisfying result. For reasons already noted, the written records of ancient rites obscured the issue more often than they enlightened it. Apart from textual corruption, the speculations of commentators unversed in archaeology had woven a tissue from which the threads of fact and fancy could hardly be disentangled. The persistence, too, of many terms which denoted the same object added to the confusion, for the nomenclature of bronzes varied according to locality throughout feudal China. Absence of a scientific spirit from Chinese archaeological discovery precluded help which might have been derived from associated objects or from detailed knowledge of conditions when bronzes had been excavated in sets. Rarely in literature of the past may be found data approaching in completeness those gained from the famous group unearthed near Pao-chi Hsien in 1901 (*v.* **41** and **153**, i 1-14), and now in the Metropolitan Museum, New York. Rarely, too, from ancient inscriptions may information be gathered concerning grouping. One of the few instances known occurs on both lid and body of a *tui* (or *chiu*). Reproductions are included in many of the treatises devoted to epigraphy, *e.g.*, **99**, iii 31, 32; **144**, iv 15, vii B, 13; **151**, iii 46; **177**, iii (i) 4-6; and **179**, x 14. The copy shown here (FIG. 40) comes from the lid, and this is the translation: "Han Huang Fu made for Chou Yün a basin (*p'an*), a *ho* and other wine vessels, and a *tui* (or *chiu*). Of cauldrons (*ting*), supplied for himself, he bestowed ten, together with eight *tui* (or *chiu*), a pair of *lei*, and a pair of *hu*. May Chou Yün's descendants treasure and use them for a myriad years!" Certain inferences to be drawn from this inscription are mentioned in the notes on the special classes which follow.

The multiplicity of names in the classical accounts of ceremonial has already been remarked. Scholars under the Han and later often failed to recognize the synonyms, and they misunderstood the significance of certain characters inscribed on bronzes. Thereby the ritual vessels came to be allocated to an unnecessary number of classes, some of which are hardly distinguishable one from another. This undue plurality in classification, a heritage from the Sung still generally accepted, needs to be simplified. Accordingly, the attempt is made here to rearrange the chief ceremonial vessels under twenty-five headings, and it involves several drastic departures from established custom. So far as space allows, the various arguments which justify the changes are mentioned, and they include most of the salient points contained in Jung Kêng's lucid essay on the subject (**79**). Finality is not claimed for the new classification; indeed, in the light of present knowledge any such attempt can be but tentative. Perhaps, in course of time, some of the vessels, now accepted as part of the ritual outfit of antiquity, will be recognized as pseudo-archaic offspring of the *San li t'u* and similar efforts at reconstruction. On the other hand, certain types, at present suspect, may prove to be real relics of feudal China. There is, for instance, a strangely shaped vessel pictured in both the *Po ku t'u lu* (**160**, xv 21) and the *Hsü k'ao ku t'u* (**5**, iv 22), and another like it in one of the Berlin State Museums (*v.* **90**, PLATES 5-7). The compilers of the Sung catalogue suppose it to be a Han creation made in ignorance of classical models. Yet it may be pre-Ch'in; and I venture this surmise for various reasons, one being that the type has distinctive features incompatible with a feeble reconstruction based on insufficient knowledge of an old tradition.

Among the customary misnomers corrected here are the terms *tsun* and *i*. A full statement of the case against them would be too lengthy, but some words of explanation seem called for. Both are really terms of general application (*v. sup.* pp. 24, 25), and therefore the common practice of cataloguers in using them to signify special classes entails many anomalies. For instance, among the diverse types labelled *tsun* in many catalogues are some of the larger *ku* (FIG. 41, 19) and *chih* (20). No doubt they are thus named because they exceeded the sizes laid down for their respective classes;

yet probably the compilers are mistaken in relying on theoretical standards. In this article and the following descriptive notes I have removed most of the vessels usually included in the categories *tsun* and *i*, and have redistributed them under more specific headings. There remain a few for which distinctive names seem lacking, and these I have retained under the old headings for want of better.



FIG. 41.

TING (1).

The tradition that this is the oldest of bronze vessels is not likely to be questioned if the class be taken to include the *li*, next on the list. Its forerunner was doubtless the primitive pottery cauldron, one of the earliest inventions of man. The bronze cauldron served as a cooking vessel also in ritual ceremonies, and there is the familiar history of certain *ting* being treasured as emblems of sovereignty down to the end of the feudal period in the third century B.C. (**187**, 1, 2). Moreover, this class was often chosen to bear important inscriptions, doubtless partly because the shape was convenient. The *Tso Commentary* contains two accounts (**94**, v 609, 732) of penal codes cast on *ting*, and of consequent remonstrances that litigation would thereby be encouraged. The longest and most important inscription known at the present day is that of 497 characters on the Mao Kung Ting. Four examples in the Collection (A 2-7) represent common types of this numerous class. The first is the simplest: three cylindrical legs, to support the cauldron above the fire, and two upright "ears," also unadorned, by which the vessel may be lifted by means of a bar thrust through them. Besides the types here represented are those with square bodies, rectangular throughout or rounded below, and four legs. Countless variations occur in the form of the legs, and there is a rare type having a shelf below the body (*v.* **3**, i 44). The "ears," which generally stand upon the brim, sometimes spring from outside the body. In height the *ting* range from over three feet to little more than two inches.

LI (2).

The definition given in the *Êrh ya* (**2**, ii 6) that "a *ting* with hollow feet is called a *li*" cannot be bettered, unless perhaps to say that "a *li* with solid feet is called a *ting*." In fact, the two classes merge, and sometimes the assignment of a vessel to one or the other is debatable. Thus A 3 has some features of a *li*, though on the whole it is more fittingly classed as a *ting*. Whether one is the parent of the other, or whether both co-existed from earliest times, will perhaps be settled by future excavation. Andersson found them together (**9**, 32-34, PLATES VII and VIII). At any rate, the bronze *li* had a pottery prototype of which a fine example is in the Collection (*v.* Hobson, *Cat.*, i PLATE I). Moreover, the common type of bronze *li*, which has vertical striae for decoration, clearly perpetuates the archaic pottery vessel covered with a mat-impression—a fact recognized by Laufer (**93**, 10-12, PLATES I and II). The type in the Collection, A 1, is the most usual. Some have four feet, and some have "earṡ," either standing upon the brim or springing from the body. There is a rare instance of twisted ears (**152**, i 48). Probably the *li* were used in the same way as the *ting*, though their capacity is smaller; the height ranges from one foot to about three inches. The inscriptions, generally brief, often run round the brim; sometimes they are on the belly (*v.* **107**, Supp., 7).

YEN or *HSIEN* (3).

Archaic forms of the character *yen* are pictograms of a vessel composed of two parts—an upper resembling a cauldron, or, perhaps more exactly, a steaming pan, *tsêng*; and a lower shaped

like a *li* (*v.* **116**, ii 38). The present form (3) offers several problems, the most interesting being the presence of the "tiger" element. To explain it Hopkins advances the ingenious and plausible theory that it results from an erroneous identification of the upper part of the archaic pictogram with the head of a "tiger" pictogram (**62**, 475-8). The earliest script on bronzes has the "dog" element on the right, and the *Shuo wên* explains it by allusion to sacrificial offerings of dog's meat. The "earthenware" element, as in (3), is a later substitution.

The *yen* is a colander or steamer for vegetables and cereals. Generally a grid, often hinged on the brim of the lower part, serves to hold the food in the upper. Like most of the ancient bronze vessels, the *yen* was not designed solely for sacrificial rites and ceremonial occasions; and an inscription of thirty-eight characters on one (**151**, ii 87) throws light on this fact. It contains the words: ". . . for use while campaigning, while travelling, wherewith to make soup from rice and millet. . . ." Some *yen* are square and have four feet; some have "ears" on the lower as well as the upper part; some have the grid fixed to the base of the upper part; some have an upright partition dividing the upper into two compartments (**33**, i 19); and some neither grid nor partition. Height ranges from about two feet to about four inches. No example in the Collection.

TUI (4) or *CHIU* (6).

Since the Sung period the numerous class about to be considered has been generally known as *tui* (4), yet probably in ancient times it was called *chiu*. An attempt to account fully for this discrepancy of name would be too complicated and lengthy for the present purpose, and therefore I will confine myself to a few particulars.

On many bronzes an archaic character occurs which, though usually equated with *tui* (4), has a closer structural analogue in *chiu*, written 𣪊 𣪘 in "Small Seal" and modern script respectively, the former being copied from the *Shuo wên* (**72**, iii (2) 6), where the meaning of the word is defined as "to bend." The inscription reproduced above (FIG. 40) contains two examples of the archaic form (second of second column, and first of third), and from the Honan Finds four are published by Lo Chên-yü, who remarks that the element on the right depicts a hand holding an object, presumably a ladle used to fill or empty a *tui*. He notes that this element is not the *p'u* (determinative No. 66) which comprises half the character *tui* (*v.* **116**, ii 38). Hopkins pursues the subject further (**65** (1917), 800-807); but neither he nor Lo equates the archaic form with *chiu*. The chief supporters of the identification with *chiu* are Ch'ien Tien, Huang Shao-chi, and Jung Kêng. In a recent article, the last-mentioned sets forth convincing arguments, repeating those of the two previous writers and adding some of his own (**79**, 90-94). Put briefly, these arguments go to prove that the character (6), now pronounced *kuei*, is a misnomer when used to denote the class of bronze vessels which are here called *hsü* (7). The ancient pronunciation of the character (6) is *chiu* (*v.* **7**, iv 60), and evidence strongly favours the equating of it with the archaic *chiu* which occurs twice in FIG. 40.

From the numerous criteria which lead to these conclusions, I quote only a few directly relevant to the inscription reproduced in FIG. 40. First, the *chiu* are here associated with *ting*, as they also are in other inscriptions (*v. e.g.* **151**, ii 5, 35), and in the *Chou li* (*v.* **10**, ii 441, 445, 447). On the other hand, *tui* are not thus associated with *ting* either in inscriptions or in classical literature. Next is the significant fact that a set of eight *chiu* is specified in our inscription; and this corresponds with frequent passages in the classics (*v.* **38**, 311, 366; **39**, i 739; **94**, iv 254). Moreover, among the vessels recently excavated at Hsin-chêng the so-called *tui* number exactly eight (**33**, i 22-23). Note should be made, however, that included in the illustrated account of these finds (**33**, i 25) are four vessels labelled with the same character (6) which, according to the present thesis, should be used to denote the class under consideration. Two of the vessels are broken and cannot be classified with certainty, while the other two appear to resemble A 40 in the Collection. Probably all four should be named *chih* or *chou*.

If the foregoing discussion were concerned merely with a question of nomenclature, the space devoted to it would seem hardly justified. However, recognition of *tui* (4) and *chiu* (6) as synonymous

involves more important issues than the renaming of two classes of bronzes. It clears up many seeming inconsistencies and obscurities which formerly perplexed students of classical texts. There are many similar problems which can be solved only when the three canons on ancient rites and customs are reinterpreted in the light of modern archaeological knowledge. But I must not leave the topic without accounting for the presence of the character *tui* often in the *I li* yet seldom in other ancient works. Jung Kêng's explanation is that, when the classics were transcribed into *li shu*, the archaic *chiu* was erroneously copied as *tui*, since the close resemblance between their forms caused confusion. Besides, the likelihood is that *tui* often took the place of *chiu* (6), because the scribes regarded the two as interchangeable.

Although accepting the views set forth by Jung Kêng, I do not propose to follow the logical course which would be to call the class under consideration *chiu* (6) instead of *tui*. The currency consistently given to the name from the Sung period onwards has established *tui* in a sort of privileged position, and a change now would only cause confusion. Another reason for retaining it is the futility of straining after pedantic exactitude while so many adjustments to ancient usage remain beyond our reach. Accordingly, the term "*tui* (or *chiu*)" is adopted here; and the class commonly called *kuei* (6) is renamed with the cognate character *hsü* (7).

In the imperial palace and humbler places the *tui* (or *chiu*) figured as containers of cereals for sacrificial rites, ceremonial occasions, and daily meals. Doubtless bronze was the usual material among the great and rich, while poorer folk were content with vessels of wood or pottery. Judging from the multitude which survive, this class must have been even more numerous than the *ting*, and no less diversified. A characteristic feature is that the vessels are round in section. The Collection contains three of the commoner types (PLATES XXXVI-XXXIX), and also the noble four-handled vessel (PLATES XIII and XIV) of which the like in shape and technical achievement is rarely seen. Besides these, three types exist which may be roughly described as resembling A 50 with additions: the first with three feet (*v.* **132**, i 24), the second with four (*v.* **4**, xiv 4), and the third with a square stand (*v.* **132**, i 23). Of two rarer types one has four handles and four legs (*v.* **4**, xiii 12, xxxi 8), and the other a rectangular fluted stand with a "girdle" hanging down on two opposite sides (*v.* **4**, xiii 8). Another rare type has a cover and curved handles springing from the lower part of the belly (*v.* **4**, xxvii 11). Height ranges from about 14 to 3 inches.

FU (5).

A rectangular oblong vase, low in proportion to its length and breadth, and having straight sides which slant steeply inwards. Often it has a base which splays outwards and is generally cut away in the centre of each side; but sometimes four feet support the vessel. The cover is almost a replica of the vessel itself, and can therefore function as such (*v.* **123**, iii 42). All the six *fu* excavated recently at Hsin-chêng have covers (**33**, i 24). Though the cover is sometimes missing, most known examples are so fashioned that they appear to have been originally fitted with covers. This was, however, not a universal rule; for according to a passage in the *I li*, "the *fu* has a cloth cover" (**38**, 371). An unusually large and splendid example belongs to the Art Institute of Chicago (**91**, PLATE VIII). The *fu* was used to contain cooked cereals. Height (without cover) ranges from about 4 to about 2 inches. No example in the Collection.

HSÜ (7).

Under this heading the vessels commonly called *kuei* (6) are classed here. Generally they are oblate in section, the width being slightly greater than half the length, and they have covers. For examples of different types see **153**, ii 49; **123**, iii 32, 36, 38; and **160**, xviii 11, 13. Rarely the vessel is rectangular in section (*v.* **123**, iii 35). The character *hsü* does not occur in the three canons of rites and customs, probably because vessels of this class are not ritual vessels. Seven out of ten examples are inscribed with the characters *lü hsü*, "travelling *hsü*," that is to say, they were designed for use during expeditions. Moreover, the *Shuo wên* defines them as portable vessels.

This must be the reason why none was found among the bronzes at Hsin-chêng. No example in the Collection.

YU (9).

The *Shuo wên* defines it as a "food vessel." The class is not numerous, nor does the character *yu* occur often on bronzes. The characteristic shape is that of a deep basin with a flattened and expanded rim, fitted with "ears." Perhaps the vessel on PLATE L is a descendant of the archaic *yu*, but on account of its probable date it can hardly be cited as an example of the class. Types somewhat like A 72 are called by this name in **3**, xvi 2 and **4**, xxxiii 45. For other types *v.* **160**, xxi 29; **3**, xvi 1, 3-8; and **151**, iv 38.

AN (10).

The *Shuo wên* defines it as a "lid turned upside down," yet the examples labelled *an* in the catalogues hardly answer to this description. The characteristic shape is like that of the *yu* (9), but with bulging belly. Perhaps A 72 should be regarded as belonging to this class (*cf.* **4**, xxxv 1-5). For a covered type *v.* **123**, v 21, and for another type *v.* **151**, iv 35.

TOU (11).

The *tou* well exemplify the fact that sacrificial vessels differed not from those used for secular purposes. Abundant written evidence exists that besides in temple rites they figured on festal and other occasions of everyday life to contain minced or hashed food. A passage in the *Chou li* describes the duties of the *hai jên*, or official "hashers" as they may be called (**10**, i 109-11). They prepared leeks, roots, sundry herbs and vegetables, spices, oysters, venison, beef, eggs, pork, fish, wildfowl, bamboo shoots, etc., and combined them in their proper proportions and set them out in *tou* of four kinds. This they did for sacrifices, banquets to foreign guests, and funerals, as well as for the service of royal personages in the palace. Laufer cites accounts of *tou* fashioned in wood, bamboo, pottery, and bronze from early times to the present day (**93**, 119-28). There are two chief types: that represented by A 53 and 89 in the Collection and a shallow coverless dish standing upon a round stem and base. The two examples in the Collection represent extremes in the range of sizes.

P'AN (12).

This is a dish or shallow basin, generally round, designed for washing during ceremonial rites and in everyday life. The fine example in the Collection (PLATE XLVII) is representative of the most usual type. Another type rests on three feet instead of a high round base (*v.* **4**, xxxii 34, 42), another has both feet and base (*v. id.*, 47), and in another the round base is low (*v. id.*, 65). There is a rare type without ears (*v.* **152**, ii 17), and one which differs from the *hsi* only in respect of its large size as, for example, those on PLATE XLVIII. Seventh in the first column of FIG. 40 is an archaic form of the character *p'an*, written without the element *min*. The large even surface of the *p'an* offers a convenient space for inscriptions; one of the longest runs to 357 characters (**76**, viii 3-8; **99**, viii 21-29; **177**, iii (1) 37-41). A tale is told of a *p'an* (perhaps not of bronze), used by the founder of the Shang-Yin dynasty, which bore the moral maxim exhorting to more than personal cleanliness: "If you can renew yourself to-day, do so every day. Yea, daily renew yourself" (**39**, ii 620).

The rarest type of this class is oblong and has rounded corners (*v.* **79**, FIG. 56). One of the bronzes excavated at Hsin-chêng is thus shaped, and it is classified in the illustrated account of the find as a *p'an* (*v.* **33**, i 26). However, it bears an inscription which contains a character which is probably *lu* (8). This inscription is the subject of a note by Wang Kuo-wei (*Shina-gaku*, iii 723-4) which is translated by Pelliot (*T'oung Pao*, xxiii 255-9). Wang Kuo-wei's explanation suggests that the bronze originated from Ch'u, and in 576 B.C. was left in the locality where it was found. The question of chief interest for the present purpose is whether this vessel may be regarded as a repre-

sentative of the *lu* (8) class. If so, it is the only known specimen, and it should occupy a category of its own; for we know from the *Shuo wên* and other sources that the *lu* are food vessels, and therefore not to be confused with the *p'an*.

I (13).

Commonly associated with the *p'an*, the *i* is the ewer from which the water is poured. The most numerous type is that shaped like a "sauce-boat." It is represented in the Collection by the beautiful example on PLATE XLV. Plastic invention seems to have been lavished especially on the *i* class, and effective use of animal forms to enliven its simple proportions has produced some of the most admirable works of art among Chinese bronzes. Striking examples belong to the Sumitomo Collection (**49**, ii nos. 95, 96). Some members of the *i* class have three feet, and in some the spout is fashioned in the form of an animal head. Height ranges from about 6 inches to little more than 1 inch.

Since the Sung period all the illustrated catalogues, except one (**5**), have included in this class the covered vessels of which the lower part partakes of the *i* shape. For reasons put forward by Wang Kuo-wei, the classification used by the unknown Sung author is reverted to here, and these vessels are described under the heading *kuang* (27).

CHIEN (14) and *HSI* (15).

The vessels labelled in the catalogues as belonging to one or other of these two classes seem not to be clearly distinguishable, nor do some differ essentially in shape from the *yu* (9) and *an* (10). Most are round deep basins, and have loops or "animal heads" carrying rings. Those called *chien* are the more ancient examples, and are said to have contained ice for preserving food and drink for sacrificial and other purposes (**10**, i 106). For examples of *chien* see **3**, xiv 31; **151**, iv 41, 42; **4**, xxxi 61; and **5**, iii 6. The last three cited are rectangular, and two have "ears." *Hsi* were used as washing vessels. Two examples in the Collection are shown on PLATES XLIX and LI.

TSUN (16).

Reasons have been given (pp. 24, 25, 42, 43) for restricting this name to sacrificial wine vessels which cannot be assigned to other classes, and therefore it is used here to denote those fashioned in animal forms. Four examples in the Collection are shown on PLATES VIII-XII. Some are in the shape of an elephant; the example of this type in the Louvre is well known. I have seen recently in the hands of a dealer one which looks like a tapir.

HU (17).

This is a numerous class which seems to have no very definite features, since vessels often placed in one or other of several classes are sometimes labelled *hu*. The archaic form of the character is a pictogram of a vase or jar (as may be seen in the third column of FIG. 40, where it is combined with the "metal" determinative), and it portrays the most common shape. The *hu* are wine vessels which figured on many occasions besides the sacrificial rites. Though they are among the oldest of bronzes, and obviously follow pottery prototypes, the greater proportion of extant examples date from the Han and after. The diversity of types ascribed to this class may be recognized by reference to examples in the Collection (A 31-33, 35, 36, 58, 59, and 74). Other types are too numerous for detailed notice here, but mention should be made of one rectangular in section which has many variants, including some with covers (*v.* **4**, xi).

LEI (18).

The *lei* are large vessels from which wine or water was poured into smaller, as may be gathered from two passages in the *Book of Odes* (**94**, iv 8, 351). In the *Li chi* the name occurs several times among the sacrificial vessels (**39**, i 564, 730, 736), and in the *Chou li* it is specially associated with

worship to the Spirits of the Soil (*v.* **10**, i 468), and it is also mentioned as a vessel from which officials drank at the invitation of the emperor (**10**, i 473, 474). The structure of the character *lei* suggests a pottery prototype and decoration with the spiral known as the thunder pattern; yet, judging from extant examples, the presence of the pattern does not characterize the class. Some vessels labelled as *lei* in the catalogues seem indistinguishable from the *hu*. The typical features of the *lei* are an ovoid body, widest at the shoulders, and a narrow neck. Sometimes a cover is fitted. Generally two loops (called "noses"), often in the form of animal heads, carry rings. A representative example was in the Tuan Fang Collection (**153**, iii 7), and it offers one of the few instances known of the character *lei*, "thunder," being inscribed on a vessel of this class. The character appears also on the two *lei* in the collection of Wu Yün, whose remarks should be read (**182**, ii, and **183**, iv and v). The class is represented in the Collection by A 34.

KU (19).

According to the *Shuo wên*, the *ku* is a goblet for drinking wine at festivals called *hsiang yin*. These banquets, attended with elaborate ceremonial and often with religious rites, took place at stated intervals (*v.* **39**, ii 652-667). The *Chou li* specifies three pints as the capacity of wooden *ku* (**10**, ii 543). The features of the *ku* are a cylindrical body, slightly expanded belly, hollow flaring base, trumpet mouth, and four (or more) vertical flanges of varying extent. That the presence of flanges was an essential of the classical type doubtless explains the words uttered by Confucius while bemoaning the decadence of his age which retained the terms of antiquity but not the realities: "A *ku* without its flanges. What a *ku*! What a *ku*!" (*v.* **94**, i 192). Examples in the Collection are A 9, 10, 41, and 42. The flanges of the last mentioned are almost atrophied. One type is square in section (**4**, xxiii 26), and one has two big "ears" springing from the belly (**4**, viii 43). A noteworthy feature is the frequent presence of one or two openings, either cross-shaped or a vertical slit, into the hollow base just below the belly (*v.* A 42).

The measurements of capacity given in such works as the *Chou li* and *Han shih shuo* do not tally with the sizes of actual vessels known to us, as has been hinted above (pp. 42 and 43).

CHIH (20).

The *Shuo wên* gives for this class a definition similar to that for the *ku*, and quotes the statement that the *chih* holds four pints (**72**, iv (2) 9). The frequent mention of *chih* in classical writings is evidence that it figured prominently both in ritual ceremonies and on festal occasions. Examples in the Collection are A 8, 43, and 44. Besides these types, there is one fitted with a cover (*v.* **151**, v 14). Height ranges from about 3 to about 9 inches.

P'OU (21).

The use of this class of vessel is not known with certainty. From several passages quoted in **4**, xxxiv 13 the *p'ou* appear to have been containers either of salted and dried cereals and meat or of a sour fluid obtained from fermented wine. The *p'ou* are coverless jars closely approximating the *lei* in shape, but generally having the body more spherical. The example in the Collection is on PLATE XXIX. Many variations in type may be seen among the thirty examples pictured in **4**, xxxiv 14-42. Probably most distinctive of the class is the type represented in the Rutherston Collection (**86**, PLATE 48) and in **4**, xxxiv 17, 18.

HO or *HUO* (22).

The class represented on PLATES XLII and XLIII has been called *ho* since the Sung period, and most Chinese archaeologists have held that the vessels functioned for the mixing and flavouring of food. This notion, probably erroneous, is based on Hsü Shên's definition of the word *ho*: "to season, flavour." Obvious suitability of the vessels as containers and pourers of a thin fluid rather than of food or sauce leads one to believe that their true purpose was to hold water for mixing with wine. Moreover, Wang Kuo-wei (**166**, 7, 8; **167**, iii 13, 14) points to the fact that among the Pao-chi set,

mentioned above, the only vessel not generally recognized as a wine container is the *ho*. From its presence there he argues that it must have functioned in the wine ceremonial, and also he quotes passages from classical writings to prove that the custom was to mix water with the wine on many occasions. The hoop-handles with which some *ho* are fitted would render easy the shaking and mixing before the diluted wine is poured into drinking vessels.

Acceptance of this plausible theory is apart from the question whether the so-called *ho* class was originally known by this name. The *Shuo wên* omits *ho* as a term for a vessel, nor does the character occur with this sense in the classical writings. These facts may be explained by loss of tradition and textual corruption; and there is tangible evidence that the character *ho* does occur in certain inscriptions on bronzes where it seems to denote a class of vessel—witness the last character but one in the first column of FIG. 40. The Sung writer Tung Yu argues that the class so named was a large type of cauldron or *ting*, called by a word of like sound, which figured in the bloodless *chien* sacrifices (**155**, ii 8, 9). Much might be said on this topic.

Besides the type represented in the Collection, there are *ho* with three legs and one with a hoop-handle. Several of the latter occur in *Po ku t'u lu* (**160**, xix 36-49). The first has an inscription containing a character which presumably represents the name of the vessel, but the reading of it as *ho* seems hardly justified. In height *ho* range from about 1 foot to about 5 inches.

YU (23).

The *Chou li* specifies *yu* as the vessels used to hold fragrant black millet wine in the ancestral shrine (**10**, i 469). Though the text has not *yu* (23), a commentator states that this is the character represented by the homophone which is written in place of it. In fact, *yu* (23) in several other classical passages is named together with *chü ch'ang*, a spirit distilled from black millet and flavoured with herbs (*v.* **94**, iii 449, 618; v 554). Apparently this class of vessel, filled with the aromatic spirit, figured among gifts bestowed by the king so that with it the recipient could worthily announce to his ancestors the royal favours. The four examples with hoop-handles in the Collection are especially fine (A 21-30). Two other examples of the type which is oval in cross section belong to the famous Pao-chi set (**153**, i 3, 4), the second having a square stand—a very rare combination. A cylindrical type is known (**4**, xvi 3; **153**, ii 34, 35), and a still rarer one with a spout (**79**, 133). Some lack a handle (**4**, xvi 24; xvii 12), and others have a yoke handle attached to the body with chains (**4**, xvii 14-28). Mention must also be made of the rare variant in the Sumitomo Collection which is fashioned in the form of a beast clasping a human figure (**49**, ii 68 *a* and *b*).

CHÜEH or *CHIO* (24).

Arguments have been given above (p. 23) in support of the theory that the prototype of this class of wine goblet was a vessel fashioned in the form of a bird's head. The prominence of birds in the earliest sacrificial rites of China awaits thorough investigation. A section of the *Chou li* is devoted to the duties performed by officials specially concerned with cocks. These included the provision of cocks for sacrifice, and the warning of celebrants, probably by imitating cock-crow, to attend at the appointed hours (**10**, i 470-2). Thereon is based the notion that the supposed bird-like prototype of this class served to symbolize punctual performance of the rites. Moreover, the character *chüeh* (24) is used as a general term to embrace other of the sacrificial wine vessels (19, 20, 25, and 26) besides the class under consideration, which has the smallest capacity.

Distinctive *chüeh* are the two in the Collection (A 38, 39). There is a variant with flat bottom (**49**, ii no. 85), and a square type with four legs (**91**, PLATE III). In height the *chüeh* usually range from about 8 to 5 inches.

CHIO (25).

Apart from its use to designate a particular class of bronze drinking vessel, the common connotation of this character is "an animal horn." This, therefore, would be a fitting opportunity to

speculate whether the class under consideration and also others whose names are written with characters containing the "horn" element (19, 20 and 27) are descendants of prototypes fashioned in horn. But the problem is too complex to be pursued here, and mention must suffice that rhinoceros horn goblets were common in ancient China—a fact amply demonstrated by Laufer (*Chinese Clay Figures*, 159, 166-171). Concerning the last of these characters, *kuang* (27), another explanation is offered later. The class recognized as *chio* (25) in the catalogues resembles the *chüeh* without the capped uprights, but the average size is larger than that of the *chüeh*. Examples may be seen in **8**, x 5 and **151**, v 119. Perhaps it would be more accurate to qualify this statement by saying that in place of the differently shaped "spout" and "tail" of the *chüeh*, the mouth of the *chio* is often bilaterally symmetrical, as, for instance, in the example belonging to the Pao-chi set (**153**, i 12). Another feature differentiating this class from the *chüeh* is the frequent presence of a cover (*v.* **4**, xxvi 44-47). Height ranges from about 9 to 7 inches. No example in the Collection.

CHIA (26).

This is larger than the other drinking goblets except the *kuang*. It is a round pot with three legs, handle, and the two capped uprights, rising from the brim, which characterize the *chüeh*. The various types are well represented in **160**, xv 7-20. Height ranges from about 17 inches to about 5 inches. No example in the Collection.

The class is the subject of discussions by Lo Chên-yü (**116**, ii 37) and Wang Kuo-wei (**166**, 3, 4; **167**, iii 11, 12) which are highly interesting, apart from the particular study of the *chia*, inasmuch as they demonstrate one of those errors in the transcribing and interpreting of archaic script which doubtless have contributed to the prevalent confusion concerning ancient bronzes. The archaic form of *chia*, as inscribed on bronzes, is a pictogram composed of three legs, two capped uprights, and a handle. This, minus the handle, is paralleled on the Honan Finds, and another form from the same source lacks also one leg but has the addition alongside it of a "hand holding something." The lower element of the present *chia* (26) is doubtless due to a mistaken interpretation of this "hand," and therein the author of the *Shuo wên* is at fault. Moreover, the archaic form of *chia* with "hand" closely resembles the archaic forerunner of the *san* which now occurs in classical texts associated with *chüeh* (*v.* **39**, i 547; ii 336). Thus *san* is an erroneous transcription of *chia*, and a correction in this sense reconciles various seeming discrepancies, hitherto difficult to explain.

KUANG (27).

When dealing with the ewers named *i* (13), allusion was made to the fact that all the catalogues, except one, include under that heading another class which is the subject of this note. Wang Kuo-wei proves conclusively that this other class differs essentially from the *i*, inasmuch as it is a covered wine vessel, and that its proper name is *kuang* (26) or "rhinoceros" (*ssŭ*) *kuang* (**166**, 4-7). His correction of the confusion which has hitherto prevailed necessitates a revision of the customary classification. A translation of all his arguments and of others contained in Jung Kêng's admirable note (**79**, 105-8) would be too lengthy for the present purpose, and I confine myself to a few leading points.

Only three of the standard illustrated catalogues of bronzes contain objects labelled *ssŭ kuang*. In two of these the name is wrongly applied to rhytons which have the ox-horn goblet for prototype (**3**, xii 17, 18; **40** (Metal Section), 50). Alone the unknown Sung author of the *Hsü k'ao ku t'u* correctly uses the term (**5**, ii 8, 9; iii 21), but he labels as *kuang* (27) another vessel which appears to be an *i* (13). The woodcuts in the extant version of this work are obviously unreliable as to detail, and perhaps the last mentioned is really a *kuang* without its lid (*v.* **5**, iii 27). The characteristic features of the *kuang* or *ssŭ kuang* class are, however, shown in the two former woodcuts. The body is shaped somewhat like an *i*, and presumably the confusion between the two classes has arisen owing to this resemblance. An essential part of the *kuang* is the lid or cover which is shaped at its fore end in the form of an ox head. This feature is apparent in the quaint miniature, A 62, which represents the class in the Collection. When a *kuang* appears in catalogues minus the lid (*e.g.* **5**, ii 8), the

explanation is that the lid has been lost. Two reasons may be advanced for the name *ssŭ kuang*: one that the prototype of the class was carved out of rhinoceros horn, the other that the curved contour of the brim follows that of a horn. Whether the term *ssŭ kuang* in the classics (*v. e.g.* **94**, iv 9, 233, 387, 606) signifies a bronze of this class, its prototype, fashioned in rhinoceros horn or merely a goblet of no specific shape, carved out of the same material, is open to question; but the balance of evidence seems to favour the first.

Wang Kuo-wei passes in review a number of known bronzes labelled as *i* (13). From among them he picks out all those of the covered type, amounting to more than thirty, and he finds that not one is inscribed with an unquestionably genuine character *i*, while all the remainder are thus inscribed. Moreover, certain passages in the classics indicate that the *kuang* were used as wine vessels for ritual and ceremonial occasions, and that they were the largest of the wine-vessels—a fact signified by the name. As with the other classes for holding wine, besides a big type designed to serve as a container, there are smaller members of the class for use as drinking vessels. On the other hand, the *i* were used as water ewers, generally at banquets, and therefore did not require lids.

An example of the type with rounded base belongs to the Rutherston Collection (**86**, PLATE 22). Because of its simplicity and plastic unity, it is more impressive than some which are so highly decorated with animal forms that they provide archaic bestiaries (*v.* **49**, ii 94; **160**, xx 26). Another simple example of this type is one in the Tuan Fang Collection (**153**, iii 35), accompanied with a ladle which surely disposes of the notion that it served as a water ewer. Some are rectangular in section (*v.* **153**, iii 37), and some have four feet (**160**, xx 33).

I.

There yet remain several bronze types which, in the light of present knowledge, cannot reasonably be identified with any of the foregoing classes. The imposing rectangular vessel shown on PLATES XV and XVI (A 19, 20) is one of these, and, for lack of a more specific name, the customary *i* is retained to denote it here. On page 24 this term has been shown to be a general one for ritual vessels, and therefore its use to denote a special class is excusable only as a *pis aller*. In this respect the name is a parallel to *tsun* (16), together with which it is often inscribed on bronzes.

CATALOGUE
OF THE BRONZES: RITUAL AND OTHER VESSELS, WEAPONS, ETC.

A 1, Plate I

Cauldron, *li* (FIG. 41, 2). Representative of a numerous type (*v.* p. 43). No inscription. *Cf.* **90**, pl. 19; **97**, i 24; and **107**, i 16. PROBABLY CHOU. H. 4.1′

A 2, Plate I

Cauldron, *ting* (FIG. 41, 1). Representative of a numerous type which probably is the most archaic of this class (*v.* p. 43). An illegible inscription, measuring 3 in. by $2\frac{1}{4}$ in., is on the inner surface of the side. It appears to have been impressed upon the wax model with a die. *Cf.* the first wood-cut in **160** of a vessel assigned to the Shang-Yin. DATE DOUBTFUL. H. 7.4″

A 3, Plate II

Cauldron which may be classed as a *ting*, though it has the three-lobed body characteristic of the *li* (*v.* p. 43). Legs partly hollow. Archaic type. Another view shown in A 7, PLATE V. No inscription. DATE DOUBTFUL. H. 10.25″

A 4, Plate III

Covered cauldron, *ting*, of the type usually assigned to the Han, though it probably existed during the latter part of Chou and the Ch'in periods. Many examples of this type are known, but the decorative design shown here is rare. No inscription. PERHAPS HAN. H. 8.1″

A 5, Plate IV

Covered cauldron, *ting*, of the type usually assigned to the Han. *Cf.* **3**, iv 18; **4**, xxxi 23. No inscription. PROBABLY FORMER HAN. H. 6″

A 6, Plate IV

Lid of A 5, viewed from above. D. 6.45″

A 7, Plate V

A second view of A 3 (*q.v.*).

A 8, Plate V

Wine vessel, *chih* (FIG. 41, 20). Vessels of this size are usually labelled *tsun* (FIG. 41, 16). Reasons for adoption of the present classification are given on pages 42 and 43. This bronze appears to be identical with one formerly in the Manchu imperial collection (*v.* p. 25). The catalogue (**4**, ix 9) labels it *Chou Ku Chung tsun*, owing to a mistaken decipherment of the first

character in the inscription (FIG. 25), on the inner surface of the base, which should be read: "Kao Chung made in honour of Fu Ting this precious sacral vessel." The compilers of the catalogue cite a vessel, inscribed with the characters *Fu Ting*, which is assigned to the Shang-Yin (**160**, vi 16), and they remark that the famous statesman T'ai Kung, who took part in founding the Chou dynasty, had a son named Ting. However, they point to the fact that Fu need not necessarily be regarded as an honorific title confined to Shang-Yin usage; for such titles were used later as surnames. Further they note that the name Chung occurs in similar inscriptions on Chou bronzes, and they suggest that the maker of this vessel was an ancestor of Ku Pi who held high office under the Northern Wei in the fifth century A.D.! This last seems a highly gratuitous surmise, even if the name had been Ku, which apparently it is not. The vessel is corroded in places, but the corrosion products have been removed and the surface is polished.

DATE DOUBTFUL. H. 8″

A 9, Plate VI

Wine vessel, *ku* (FIG. 41, 19). The classification customary for this type is *tsun* (*v.* p. 42). On account of its size, this vessel is more suited for use as a container than as a drinking goblet. The incrustations, some like nodules of malachite, are unusually beautiful. Below the inner surface of the hollow base is sunk a figure shouldering a halberd (FIG. 19), and four possible explanations of it are given above (p. 22). The foot of the figure is 1.5 in. above the rim of the base.

PROBABLY CHOU. H. 13.8″

A 10, Plate VII

Wine vessel, *ku* (FIG. 41, 19). The remarks concerning the classification and use of A 9 apply also here. The wax model for this bronze was evidently made in a three-piece mould (*v.* p. 38). The designs on the three sections differ only in detail. Touching-up of the model was confined to a minimum, nor is there evidence that the bronze was tooled after the casting. A splendid example of archaic design and craftsmanship (*cf.* **49**, No. 31). The sign (FIG. 20) sunk below the inner surface of the base cannot be paralleled, so far as I know. Perhaps it represents a serial number of a set (*v.* p. 22).

PROBABLY CHOU. H. 11.3″

A 11, Plate VIII; A 12, Plate IX

Two views of a wine vessel of the class *hsi tsun*, fashioned in the shape of sacrificial animals. This is the most archaic among known examples of the ram type (*cf.* **8**, v 30, xiv 31; **86**, pl. 99). No inscription visible.

PROBABLY CHOU. H. 17″

A 13, Plate X

Wine vessel, *hsi tsun*, in the form of a sacrificial ox. Inlaid with plaques and strips of gold and silver (*v.* p. 39), most of the plaques having been lost. The figure is hollow; there is a round opening in the back through which the vessel is filled, and it has a lid with a ring for attachment to a hook, behind the head, by means of a chain, now lost. The open mouth serves as the spout. Mention has been made (p. 41) of the prevailing ignorance concerning the nature of *hsi tsun* until an actual specimen was excavated about A.D. 230. Two more, in the form of an ox, were found when the tomb of Duke Ching of Ch'i was rifled eighty years later. These provided models for the casting of *hsi tsun*. Probably A 13 was made about that time, or perhaps later in general accordance with the old tradition manifested by the excavated specimens; but evidently it is not an exact copy of an archaic model. The question is how many of the *hsi tsun*, labelled as Chou in the catalogues, really date from that period (*cf.* **3**, v 27; **4**, ix 27-39; **8**, iv 9-23). Certainly one (**4**, ix 27) was made during the *chêng-ho* period (A.D. 1111-1118) under the supervision of Chai Ju-wên (*v.* p. 20), as the compilers of the catalogue might have discovered from the pseudo-archaic inscription, had they known of the documents published by Sun I-jang (*cf.* **141**, 16).

H. 13.5″

A 14, Plate XI

An eared-owl wine vessel, *ch'ih hsiao tsun*. A strange mixture of archaic stylized ornament with naturalistic form. On the breast is a *t'ao-t'ieh* mask and on the wing is a head which perhaps represents a sacrificial victim (*hsi*), or that of a *k'uei* dragon. In spite of the conventionalized detail, the masterly modelling of the general form endows the vessel with striking realism. Among published vessels of this type, only one approaches it in owl-like characterization, and that has feet which probably are not original (*v.* **36**, 9, 10, pl. I, II). Other examples have thickened and inturned tail which, together with the feet, serve as bases of support (**3**, v 53; **8**, iv 25; **49**, No. 33; **129**, pl. XI; and **178**, 47). Many pottery versions of this type have recently come to light (*e.g.* Hobson, *Cat.*, vi, F 1). Doubtless these owl vessels are relics of a bird cult in ancient Chinese myth and sacrificial rites. The owl seems to have been the emblem of a royal line of culture-heroes who controlled thunder, ordered the seasons and invented metal casting among other primary elements of Chinese civilization. Chief of these is Huang Ti (*v.* p. 2), and the practice of sacrificing owls to him (**25**, iii 468) may be explained by the notion that ingestion of his totem could renew his divine energies. The owl is said to be specially active during the solstices, those being critical periods of interaction between the *Yin* and *Yang* principles; and chiefly is its power felt on the fifth day of the fifth moon when *Yang* and fiery influences reach their apogee. Its connexion with thunder and fire is shown by the use of pottery tile ornaments in the form of owls at the corners of roofs as a protection against fire. They are shown naturalistically on palace buildings portrayed in the Shantung sculptures (**26**, FIGS. 45, 73). Another example of homœopathic magic is based on the belief that owls eat their mothers. Owl soup was bestowed by a feudal lord on his vassals. The prince was both father and mother of his subjects, and therefore the soup acted as poison and antidote to purge them of filial impiety and strengthen their loyalty. This sacramental rite was continued by Han emperors (*v.* **48**, 515-548 *et passim*).
No inscription. CHOU OR LATER. H. 8.75″

A 15, Plate XII

A celestial cock wine vessel, *t'ien chi tsun*. Quasi-naturalistic type, inlaid with gold and silver. The bird and stand are one piece, and the *ku* (FIG. 41, 19), which holds the wine, fits into a socket in the back. Illegible inscription on inner surface of upper part of the *ku*. *Cf.* **4**, ix 43; **8**, iv 24, v 22, 23, 40; **129**, No. 381. POST-HAN. H. 18.5″

A 16, Plate XIII

Four-handled *tui* (FIG. 41, 4) or *chiu* (FIG. 41, 6). The belly is decorated with four elephants, arranged in two confronted pairs. Unusual technical achievement distinguishes the modelling of the relief and the smaller ornamental detail. Apparently the wax model was worked by hand, without the agency of moulds. This vessel is as rare in form as in excellence of craftsmanship. For the inscription, see A 17. PROBABLY EARLY CHOU. H. 7.25″

A 17, Plate XIV

View of A 16 from above, showing inscription which is reproduced in FIG. 32 and discussed on pages 27-29. D. ACROSS BRIM 10.5″

A 18, Plate XIV

Another view of A 16, showing hinder parts of an elephant pair. D. ACROSS HANDLES 15.5″

A 19, Plate XV; A 20, Plate XVI

Two views of a rectangular covered vessel classed here as *i*, for lack of a more specific name (*v.* pp. 24, 51). Some restoration has been done, and probably the knob at the top of the cover is an added part. Sunk below the inner surface of both base and cover is the inscription reproduced in FIG. 21 and discussed on page 22. *Cf.* **4**, xiii 4. PERHAPS CHOU. H. 12.4″

A 21, Plate XVI; A 22 and 23, Plate XVII

Three views of a double owl, *yu* (FIG. 41, 23). The hoop-handle is missing. The prototype of this vessel is in the form of two owls, back to back, and in arrangement it offers a parallel to the pair of rams of A 11 and 12. The original owl forms may be more clearly distinguished in two *yu* of the Sumitomo Collection (**49**, Nos. 70 and 71). This example retains the wings, eyes, and stylized breast feathers of the two birds, and is comparable to a third *yu* in the Sumitomo Collection (**49**, Nos. 69 A and B). Vestiges of the beaks (*v.* A 23) have lost their significance. So simplified and altered are the versions in **8**, vii 20 and **36**, pl. VI that the cataloguers have failed to recognize the design. PERHAPS CHOU. H. 6.4″

A 24, Plate XVIII; A 25, Plate XIX

Two views of a vessel, *yu* (FIG. 41, 23), for spiced wine (*v.* p. 49). A distinguished example of craftsmanship as regards general form, decorative detail, and technical achievement. *Cf.* **1**, pl. 44; **4**, xvii 4; **8**, vii 14; **27**, i 31; and **160**, ix 16, xi 5-7. The inscription, almost obliterated inside the upper part of the body, is partly legible inside the cover: "May descendants of [Fu] Kêng treasure this sacral vessel" (FIG. 28).

PROBABLY CHOU. H. (TO TOP OF HANDLE) 13.5″

A 26, Plate XX

Yu (FIG. 41, 23). Except for slight differences of proportion, a bronze in the Furukawa Collection resembles this closely (**129**, pl. 20). The latter vessel appears to be the same as one pictured in **1**, pl. 45, where it is stated to belong to Count Tanaka. The piece in Japan lacks an inscription, while A 26 has the two puzzling signs reproduced in FIG. 22. Omura expresses the opinion that, though the vessel may be Han, the boldness and marked relief of the decoration indicate the Chou period (**129**, 20). *Cf.* **4**, xv 24.

DATE DOUBTFUL. H. (TO TOP OF HANDLE) 10.25″

A 27, Plate XXI; A 28 and 29, Plate XXII

Three views of a *yu* (FIG. 41, 23). *Cf.* **4**, xvi 8; **97**, i 17; and **160**, xi 3. The inscription on both body and cover is partly obliterated (FIG. 26); but the two copies mutually complete the legend: "Chia made in honour of Fu Wu this precious sacral vessel. May the use of it bring him longevity, and may his descendants for a myriad years continue to treasure it and perform with it his birthday rites." PERHAPS CHOU. H. (TO TOP OF HANDLE) 8″

A 30, Plate XXII

Side view of A 26 (*q.v.*).

A 31, Plate XXIII

Wine vessel, *hu* (FIG. 41, 17). The bi-lateral holes, through cover and base, and the tubular "ears" are evidently designed for a cord wherewith to carry the vessel. Parts of the inner surfaces of lid and body, which have escaped corrosion, show a light coloured bronze as bright as if the metal had just been cast. Outlined in relief upon the base is the design shown in FIG. 42. The inner surfaces of both cover and neck are inscribed: "Shu made this precious [sacral vessel]" (FIG. 27). *Cf.* **3**, viii 45, ix 27; **49**, No. 43; **182**, i; and **183**, ii 20.



FIG. 42
Two-thirds actual size

PERHAPS LATE CHOU. H. 18.75″

A 32, Plate XXIV

Wine vessel, *hu* (FIG. 41, 17). A notable example of inlay work. The vessel is thin (.18 in.) and is of pale bronze inlaid with malachite and what appears to be niello. *Cf.* **8**, viii 39; and **128**, FIG. 36. No inscription. PROBABLY HAN. H. 14.4″

A 33, Plate XXV

Wine vessel, *hu* (FIG. 41, 17). Some of the vessels recently excavated at Hsin-chêng have splayed tongues like those which project from the cover (*v.* **33**, i 16), and so have *hu* in **4**, xix 28, 38; but search in the catalogues fails to find a parallel to the stopper, surmounted by the stem and four petals, which is separate and fits into the crown-like cover. Inlaid with gold and niello. PERHAPS HAN. H. 18.9″

A 34, Plate XXVI

This is labelled *lei* (FIG. 41, 18) tentatively. *Cf.* **3**, vi 16 and **8**, vi 7, 8. It might be called a *hu* (*v.* p. 47). The design on the two encircling bands is named "coiled *k'uei*" in the catalogues. There is an inscription of badly formed characters inside the neck (FIG. 29), apparently impressed with a die. PROBABLY POST-HAN. H. 13.5″

A 35, Plate XXVII

Hu (FIG. 41, 17), inlaid with copper and gold, the latter being confined to the eyes of the animal figures. This type of fabulous animal occurs often on bronzes; sometimes it is called a *k'uei* dragon (*v.* **4**, xxxii 39, 42; xxxv 19), and sometimes a hydra (*ch'ih*, *v.* **4**, xxi 11-15). On four of the vessels last cited it is associated with naturalistic stag and bird forms. The question whether the form on A 35 is a foreign importation or a Chinese conception borrowed by other peoples has yet to be decided. It occurs in "Scythian" art, and close parallels have been found in Europe. No inscription. HAN OR LATER. H. 13″

A 36, Plate XXVIII

Hu (FIG. 41, 17), inlaid with silver, gold, and a green composition. The bright spots in the plate are of gold. *Cf.* **3**, viii 46; **8**, vi 1 and **156**, FIG. 162. No inscription. HAN OR LATER. H. 13.4″

A 37, Plate XXIX

P'ou (FIG. 41, 21). For the uses of this class *v.* p. 48. *Cf.* **3**, xvi 15, 19; **4**, xxxiv 13-35; and **8**, xiii 25. No inscription. HAN OR LATER. H. 11.75″

A 38, Plate XXX

Chüeh or *chio* (FIG. 41, 24). A wine goblet or libation cup (*v.* pp. 23, 24, 49). The characters *Fu Kuei*, under the handle, are in relief (FIG. 14). A common type. PERHAPS CHOU. H. 7.7″

A 39, Plate XXXI

Chüeh or *chio*. *Cf.* **160**, xiv 23, 26, 36. No inscription. PERHAPS CHOU. H. 7.2″

A 40, Plate XXXI

Chih (*v.* **3**, xii 23-36) or perhaps it should be classified as *chou* (*v.* **4**, xiv 37; **8**, vi 26-29). Oblate. On inner surface of base an archaic inscription (FIG. 17) has been cut recently (*v.* p. 20). PERHAPS HAN. LONGER D. OF BRIM 6″

A 41, Plate XXXII

Wine vessel, *ku* (FIG. 41, 19). A numerous type. *Cf.* **4**, xxiv 8, 14; and **160**, xv 25, 29. No inscription.

PERHAPS CHOU. H. 12.5″

A 42, Plate XXXIII

Ku (FIG. 41, 19). A numerous type. *Cf.* **3**, xi 37; **4**, xxiv 30, 38, xxv 2; and **160**, xv 32. No inscription.

PERHAPS CHOU. H. 9.7″

A 43, Plate XXXIII

Wine vessel, *chih* (FIG. 41, 20). Gilt patches. *Cf.* **4**, xxvi 33; **27**, i 44; and **160**, xvi 12. No inscription.

DATE DOUBTFUL. H. 6.55″

A 44, Plate XXXIII

Chih (FIG. 41, 20). *Cf.* **4**, ix 5, 8, xxvi 31; **107**, i 39; and **150**, i. No inscription.

PERHAPS CHOU. H. 6.13″

A 45, Plate XXXIV

Cooking vessel, *chiao tou*. Cover missing. *Cf.* **3**, xvi 28; and **4**, xxxv 7, 11; *v.* **93**, 92-106. No inscription.

HAN. H. (TO TOP OF HANDLE) 7.12″

A 46 and 47, Plate XXXV

Two views of a vessel which perhaps should be regarded as a late fanciful variant of the *chiao tou* (*v.* A 45). Search in the catalogues fails to find a parallel. No inscription.

DATE DOUBTFUL. H. (TO TOP OF DRAGON'S HEAD) 7.8″

A 48, Plate XXXVI

Tui (FIG. 41, 4) or *chiu* (FIG. 41, 6); *v.* pp. 44, 45. Several vessels of this type are included in the catalogues but none has the design of "coiled serpents," *p'an hui*, here used with striking effect. The body and stand are cast in one piece, the handles separately. The inscription, reproduced in FIG. 30, occurs on the chests of the animals forming the handles, two characters on each. It is: "The Marquis of Ch'i made this *tui*."

PERHAPS CH'IN OR SLIGHTLY EARLIER. H. (INCLUDING COVER) 14″

A 49, Plate XXXVII

Cover of A 48 viewed from above. The central design appears to be a *k'uei* dragon.

D. OF BRIM 9.5″

A 50, Plate XXXVIII

Tui (FIG. 41, 4) or *chiu* (FIG. 41, 6). This is a type of vessel formerly called *i* (*v.* p. 24). The inscription, on the inner surface of the base, is reproduced in FIG. 16. Concerning the age of this bronze, *v.* pp. 19, 20.

DATE DOUBTFUL. H. 6.18″

A 51, Plate XXXIX

Tui (FIG. 41, 4) or *chiu* (FIG. 41, 6). A numerous type. Among the bronzes recently excavated at Hsin-chêng, eight resemble this. No inscription.

PERHAPS CHOU. H. 6.2″

A 52, Plate XXXIX

This cover matches A 51 as to type, but not exactly as to size. Probably it was made for another vessel of the set, and therefore it is reproduced here separately.

D. 8″

CATALOGUE

A 53, Plate XL

Tou (FIG. 41, 11). For the uses of this class, *v.* p. 46. No inscription.

PERHAPS LATE CHOU. H. 10.25″

A 54 and 55, Plate XLI

Interior views of cover and body of A 53, showing the colours of the corrosion products.

D. OF COVER 6.62′

A 56, Plate XLII

Ho or *huo* (FIG. 41, 22). An archaic type of the class, for notes on which *v.* pp. 48, 49. The cover is stuck to the body with corrosion products. The inscription of three characters (FIG. 15), on the belly under the handle, is "Son. Ancestor Jên."

PERHAPS EARLY CHOU. H. 9.35″

A 57, Plate XLIII

Ho or *huo*. Inlaid with gold and silver. Perhaps the sunken areas on the body and cover were originally inlaid with plaques of silver. Certain features of the design suggest memories of an archaic prototype (*cf.* **4**, xxxi 35), yet other features date the vessel as a late product (*cf.* **49**, No. 102). No inscription.

PROBABLY POST-HAN. H. 10.75″

A 58, Plate XLIV

Hu (FIG. 41, 17). Gilt. This miniature type is sometimes assigned to the Chou (**8**, 41, 42), and two examples, each with a plug-shaped cover somewhat like this, are dated Han (**8**, 44, 47). No inscription.

PROBABLY HAN OR LATER. H. 3.18″

A 59, Plate XLIV

Hu (FIG. 41, 17), a classification according to **4**, xxi 10, xxii 28. The stopper has no drop-tube such as is shown in the former woodcut and exists in the elephant type, A 87. A 59 probably is an inkslab dropper, *yen-ti* (*cf.* **8**, xiv 33). No inscription.

PROBABLY HAN OR LATER. H. 4.13″

A 60, Plate XLIV

Hu (FIG. 41, 17). A type to which no parallel is to be found in the catalogues. Probably a late product with archaic features. No inscription.

DATE DOUBTFUL. H. 8.6″

A 61, Plate XLV

Water ewer, *i* (FIG. 41, 13). See p. 47, and *cf.* **4**, xxxii 26. No inscription.

PROBABLY CHOU. H. (TO TOP OF SPOUT) 6.45″

A 62, Plate XLVI

Wine vessel, *kuang* (FIG. 41, 27) or *ssŭ kuang* (*v.* pp. 50, 51). An unusual type. No inscription.

DATE DOUBTFUL. H. 3.25″

A 63, Plate XLVI

Basin, *hsüan* (*cf.* **4**, xxxii 52). Dragon head handle. No inscription.

HAN. D. OF BRIM 9.85′

A 64, Plate XLVII

Basin, *p'an* (FIG. 41, 12). Perhaps the animal head, which occurs twice in the upper zone of cicada pattern, is there because the bronze was made for sacrificial purposes. In the centre of the inner surface are inscribed six characters (FIG. 24): "Yen (or Ch'an) made in honour of Chou Kung this precious sacral vessel" (*v.* p. 46).

PROBABLY CHOU. D. OF BRIM 14.3″

A 65, Plate XLVIII

Basin, *p'an* (FIG. 41, 12). *Cf.* **107** (Supp.) 47. Lo Chên-yü says: "Judging by the forms of the characters, the ancients used vessels (*min*) for table service, both for washing the face and head (*mu*), and for washing the hands (*kuan*), and used basins (*p'an*) for the feet" (*v.* **65** (1923), 385). Neither decorated nor inscribed. PERHAPS HAN. D. OF BRIM 13.18″

A 66, Plate XLVIII

Basin, *p'an* (FIG. 41, 12). Inlaid with gold (mostly lost) on both inner surface and upper zone of outer surface is a typical Han design including birds, deer, tigers, bears, and fabulous animals. No inscription. PROBABLY HAN OR LATER. D. OF BRIM 11.6″

A 67 and 68, Plate XLIX

Two views of a basin, *hsi* (FIG. 41, 15). Gilt and inlaid with silver, of which only traces remain. The typically Han design of birds, animals, and scrolls is outlined in short connected strokes. The central circular area (A 67) contains a dragon. *Cf.* **49**, No. 114. The rings hang from animal heads. No inscription. Repaired. HAN OR LATER. D. OF BRIM 8.65″

A 69 and 70, Plate L

Two views of a basin, *yu* (FIG. 41, 9). A late example which does not conform to the classical type (*v.* p. 46). Deeply engraved on the outer surface are spirited figures of men and animals, possibly a hunting scene. Restorations with lead have been done in several places. No inscription. PERHAPS SIX DYNASTIES. D. OF BRIM 7.35″

A 71, Plate LI

One of a pair of basins, *hsi* (FIG. 41, 15). A numerous type. Gilt and inlaid with silver. Animal heads, but pendent rings missing. *Cf.* **3**, XV 21 and **153**, VI 25, 27. Inner and outer surfaces decorated with designs like those of A 67 and 68, outlined in short connected strokes. No inscription. PROBABLY HAN. D. OF BRIM 6.55″

A 72, Plate LI

An (FIG. 41, 10). This is the name given to similar vessels in **4**, XXXV 5, 6, one of which has a cover. The same catalogue (XIV 34, 35) classifies as *chou* a like type, and so do two other catalogues (**3**, VIII 2; **8**, VI 24). Inlaid with gold. Oblate. No inscription.
PERHAPS HAN. LONGER D. OF BRIM 6.25″

A 73, Plate LI

A late bronze which does not conform to a classical type. One handle missing.
DATE DOUBTFUL. D. OF BRIM 3.9″

A 74, Plate LI

Hu (FIG. 41, 17). Gilt. Animal heads; pendent rings missing. *Cf.* **4**, XX 9; **8**, VIII 1, 17, 19.
PROBABLY HAN. H. 3.75″

A 75, Plate LII

Chung (*v.* **4**, XXXIV 6-11; **153**, VI 1-9). As regards shape, this bronze is indistinguishable from a numerous type of *hu* (FIG. 41, 17). The vessels in the two catalogues cited above are labelled as *chung* because this name is inscribed on them. *Chung* is a measure equal to 6 *hu* and 4 *tou*, and evidently this type is called *chung* when it is made to function as a measure of that capacity. *Chung* is a wine container, and from it wine is poured into goblets, such as *chih* (FIG. 41, 20). No inscription. PERHAPS HAN. H. 14.5″

A 76, Plate LIII

Lien (FIG. 41, 28). A box for cosmetics and sometimes a mirror; but not always for objects of a woman's toilet, as may be gathered from various literary allusions (*v.* **4**, xxxv 16). It was also used to contain fruit and herbs. Probably the earliest *lien* date from the Han. A 76 is a well-preserved example of silver inlay; and traces of gilding remain. The design closely resembles that pictured in **3**, xvi 34. *Cf.* **8**, xiii 40. Cover missing. No inscription.

PERHAPS HAN. H. 3.95″

A 77, Plate LIII

Lien (FIG. 41, 28). A more numerous type than the foregoing. Outer surface, except the base, is gilt, and decorated with designs like those of A 67 and 68. Outer surface of base and interior of body and cover are painted in tempera. *Cf.* **49**, No. 132 A. No inscription.

PROBABLY HAN. H. 6.12″

A 78 and 79, Plate LIV

Under surfaces of cover and base of A 77 painted in tempera. Other painted surfaces are obscured with corrosion products. *Cf.* **49**, No. 132 B. D. OF COVER 6.5″

A 80, Plate LV

Vase, *p'ing*. The funnel-shaped top is separate. The hinged lid to the hollow process on the shoulder is fixed with corrosion products. Most of the examples in the catalogues are labelled T'ang (*v.* **3**, viii 35, 36; **4**, xviii 16; and **8**, vii 30); but one is assigned to the Han (**3**, viii 30). No inscription.

DATE DOUBTFUL. H. 14.9″

A 81 and 82, Plate LVI

Brazier, *wên lu*. The three Manchu catalogues call this type an ice container, *ping chien*, and two assign it to the Chou period (**3**, xiv 32; **4**, xxxi 64; and **8**, xii 47-49); but surely it is a brazier, as described in the earliest Sung catalogue (**123**, x 14), and it can hardly date before the Han. The animals are those used to symbolize the Four Quarters: Tortoise and Snake for North, Scarlet Bird for South, Green Dragon for East, and White Tiger for West. The four supporters of the body are said by Lü Ta-lin to be *hu*, natives of Turkestan or India; but no racial type can be recognized from the shapeless figures of A 81 and 82 (*cf.* **93**, 226). Base of body perforated. Cover missing.

HAN OR LATER. H. (TO TOP OF HANDLE) 4.75″

A 83, 84, and 85, Plate LVII

Three views of censer, *hsüan lu*, in the form of a cock with chick on breast. Half the perforated back and wing on either side is cast in one piece and hinged to open outwards, thus allowing the cavity of the body to be filled. *Cf.* **3**, xviii 33, which is assigned to the T'ang. No inscription.

DATE DOUBTFUL. H. 6″

A 86, Plate LVIII

Ink-slab dropper, *yen-ti*. No inscription.

DATE DOUBTFUL. L. 3.5″

A 87, Plate LVIII

Ink-slab dropper, *yen-ti*. *Cf.* **3**, xviii 25, which is a harnessed elephant described as a book-weight, but apparently it has an opening on the back, and in this there might originally have been a dropping tube. The dropping tube of A 87 is distinctive of the *yen-ti* class. Its hidden length is 1.87 in., and thus its lower end reaches the floor of the cavity within the elephant's body. Its lumen is continuous with the opening in the four-lobed cap. While the tube, containing water, is lifted out with second finger and thumb, the first finger is pressed upon

the opening. Removal of the first finger allows air to enter, and the water in the tube falls on to the ink-slab. The hollow process on the elephant's trunk is difficult to explain. On account of corrosion products, the question whether the trunk is hollow cannot be settled. No inscription. PERHAPS HAN OR LATER. H. 4.44″

A 88, Plate LVIII

A dove-chariot (*chiu ch'ê*) toy. Two of like type, but differing from this in minor details, are portrayed in **160**, xxvii 44. One is ascribed to the Han, the other to the Six Dynasties; and the saying is quoted that "a boy of five delights in the dove-chariot, one of seven in the bamboo (hobby) horse." The design is explained in the text by an allusion to the ode of the *Shih ching* (**94**, iv 222-4), in which a dove with her chicks symbolize maternal love. Laufer (**92**) and Seligman (**137** and **138**) suggest that this type of toy has for prototype a bird-chariot which existed in plenty, complete with one or more accessory chicks, throughout Europe and Anterior Asia in the later Bronze Age. Perhaps it entered China under the Han. Bird-chariots, of bone or wood, survive among the Ainu and palæasiatic tribes of Siberia. A 88 is shown in the position it assumes when drawn by a string threaded through the ring on the bird's breast. When not in motion, its tail rests on the ground. One of the *Po ku t'u lu* woodcuts and the text is reproduced in **158** (Section on Utensils), v 9, among the chariots and carts. For other examples *v.* **4**, xxxviii 27. No inscription. DATE DOUBTFUL. H. 2.68″

A 89, Plate LVII

A miniature *tou* (FIG. 41, 11). Gilt. No inscription. DATE DOUBTFUL. H. 3.31″

A 90 and 91, Plate LVIII

Two views of a "reversible lamp," *lu lu têng*; the former showing the movable half of the cover turned back on its hinge. On the floor of this half is a spike; probably round it one end of the wick was coiled, while the lighted end extended beyond the edge of the short projecting gutter. Probably this upturned half of the cover was replenished with oil from the reservoir

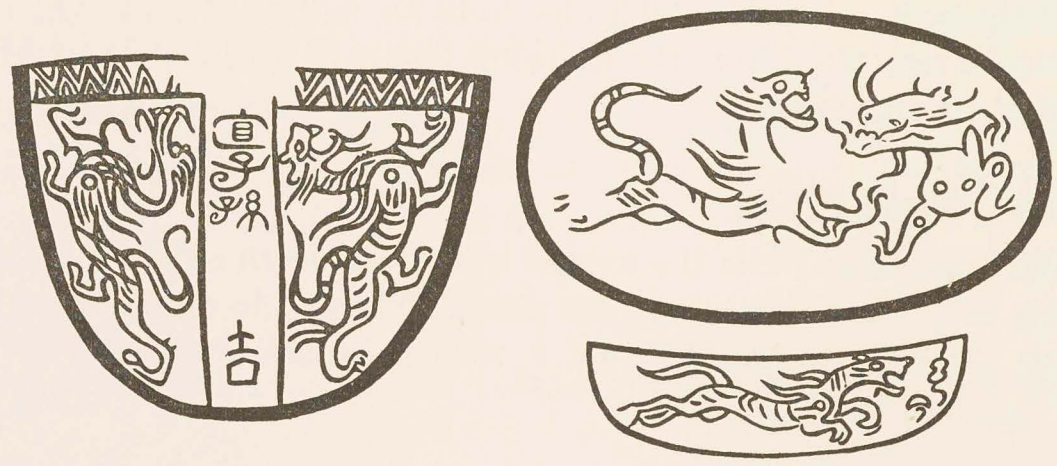


FIG. 43.

below, and, when it was closed, the unused oil in it flowed back into the reservoir. Designs are deeply engraved on the cover, bottom, and horizontal side flanges. Two dragons and two tigers are on the cover, one half of which is shown on the left of FIG. 43. The inscription running down the centre is: "May [the owner of this lamp] have his due of sons and grandsons. Good luck. Good luck; great good luck" (*v.* p. 32). The designs on the bottom and one of the flanges are shown on the right of FIG. 43. Among Ch'in and Han objects in the *K'ao ku t'u* are woodcuts of two similar lamps (**123**, ix 15-16), and they manifest clearly the unreliability of the pictures in this catalogue; for the style of decoration and script differ totally from that shown in FIG. 43 and all other known examples of Han craftsmanship. PROBABLY HAN. L. 4″

A 92, Plate LIX

Probably a lamp. The lighted end of the wick would hang over the edge of the dish containing oil.

DATE DOUBTFUL. H. 4.18″

A 93-95, Plate LIX

Three caps for the butt-ends of staffs or shafts of spears, etc., *chang tui*. A 93 is inlaid with gold and silver and 95 with silver. Pear-shaped in cross section (*v.* p. 66).

PROBABLY HAN. L. OF LARGEST (A 95) 4.75″

A 96, Plate LIX

Hill-censer, *po shan lu* (*cf.* **4**, xxxviii 44). Laufer discusses this type at length (**93**, 174-198). The perforated cover is removable.

HAN OR LATER. H. 4.25″

A 97, Plate LIX

An ornament to top of a staff, the middle part of the base being socketed, and across the socket runs a pin. Design repeated on other side.

DATE DOUBTFUL. H. 4.25″

A 98, Plate LIX

Tub; design around the sides *repoussé* and engraved. Interior is lined, and base, in centre of which is round hole, is soldered on. Outer surface gilt. Use unknown.

DATE DOUBTFUL. H. 2.75″

A 99 and 100, Plate LX

Two views of sheath for staff or standard, *chang tui* (*cf.* **8**, xiv 19, 20; **135**, pls. ii, iii, and **136**, text, 375-6 and Figs. 259 (1) and (2)). Inlaid with silver.

HAN OR LATER. H. 9.68″

A 101, Plate LX

Cap for butt-end of staff, *chang tui* (*cf.* **8**, xiv 21).

PROBABLY HAN. H. 6.87″

A 102-105, Plate LXI

Three examples of a type of which the use is unknown to me. A 105 shows a back view of A 104; the three rings indicate that this type of object is an ornament for attachment to a flat surface.

PERHAPS HAN.

A 102 and 104. H. 12.5″

A 103. H. 9.87″

A 106, Plate LXII

Object of which the use is unknown to me.

PERHAPS HAN. L. 6.37″

A 107, Plate LXII

Object of which the use is unknown to me. Hollow. Perhaps a stand.

DATE DOUBTFUL. H. 5.18″

A 108, Plate LXII

Feather holder, *hsi* (*cf.* **3**, xviii 36). According to the section on chariots in the *History of the Later Han*, both the gilt *tsung* (ornamental crest for a horse's head) and the square *hsi* have inserted in them pheasant tail-feathers. The seventh century writer Li Shan remarks that square *hsi* were fitted on either side of the chariot shafts in order that the pheasant tail-feathers, protruding from them, should prevent the horses from bumping each other. A 108 is a plate with two tubes for the feathers, and holes for attachment with bolts or thongs.

PERHAPS HAN. H. 3.8″

A 109, Plate LXII

A perforated and bent gutter. Its convex surface is stamped thrice with the *t'ao-t'ieh* design. Purpose unknown to me. DATE DOUBTFUL. L. 18.68″

A 110 and 111, Plate LXIII

Two sides of what probably is a chariot fitting. An object like this, pictured in **95**, iv 13, is labelled "support for chariot pole," *ch'ê t'o yüan*. DATE DOUBTFUL. L. 4.87″

A 112 and 113, Plate LXIII

Two views of a socketed object, one of a pair, which may be a chariot ornament.
PERHAPS CHOU. L. 7.6″

A 114-119, Plate LXIV

Front and side views of three linchpins, of which pairs are in the Collection. In order to exhibit fully the decorative detail, both pins of the pair are shown in A 115. The absence of a slot from the pin A 118 and 119 may be due to loss of its lower end.
PERHAPS HAN OR EARLIER. L. (OF LARGEST, 116-119) 4.75″

A 120 and 121, Plate LXIV

A pair of axle-caps with linchpins *in situ*. PERHAPS HAN OR EARLIER. H. 2.12″

A 122-130, Plate LXV

Various objects which may or may not be chariot and harness ornaments. A 122-127 appear to belong to a set; they are alike as to their good state of preservation, the steely-blue colour, and the sharp definition of the decorative designs. PERHAPS CHOU

A 122 and 123 (two views of one object). H. 6.5″

A 124 and 125 (ditto, one of a pair). H. 8.12″

A 126 and 127 (ditto, one of a pair). H. 3.56″

A 128. H. 3.75″

A 129 (head of A 128). D. 2.56″

A 130 (head of A 126 and 127). D. 1.37″

A 131-133, Plate LXVI

Two objects which perhaps are chariot fittings. They have features in common with A 122-127, and apparently belong to the same set. A 132 and 133 are views of the second object, arranged to show its two planes set at rather less than a right angle, one to another. It is cast in one piece. PERHAPS CHOU

A 131. L. 16.25″

A 132 and 133. L. 15.87″

A 134 and 135, Plate LXVI

Top and side views of a cap, inlaid with silver, perhaps for the roller of a picture or scroll.
DATE DOUBTFUL. H. 3″

A 136 and 137, Plate LXVI

Two views of a jingle or rattle. A numerous type, sometimes described as used in the dance, *wu nao* (*e.g.* **3**, xvii 49-51; **123**, x 21); but Juan Yüan discusses the subject (**27**, ii 18, 19) and suggests that this type was fixed on a chariot. The helve is socketed, and the ball appears to be of stone. DATE DOUBTFUL. H. 7.12″

A 138, Plate LXVI

Bevelled ring without decoration. Perhaps for harness. DATE DOUBTFUL. D. 2.5″

A 139, Plate LXVI

Ring. Perhaps for harness. PROBABLY HAN. D. 3.25″

A 140, Plate LXVII

Another form of the jingle or bell rattle, usually called *ch'i ling*, is said to be fixed at the top of a flag standard. Discussing an example of this class, the compilers of the *Po ku t'u lu* quote a sentence in the *Tso Commentary*, which Legge translates: "The bells on his horses' foreheads and bits, and those on his carriage pole and on his flags . . ." (**94**, v 38, 40). This indicates the multiplicity of bells in the carriage equipment of feudal China, but, as the compilers remark, knowledge of the bells and their respective positions is lost. Another author suggests that those like A 140 were fixed to the horses' foreheads (**95**, iv 8). An interesting fact is the frequent occurrence among finds in Siberia of bronze objects similar to A 140 in shape, but with the terminal bell rattles atrophied (*v. Collection Tovostine*, pl. VI, 1). Doubtless the author, A.-M. Tallgren, is right in tracing these to a Chinese origin (*op. cit.*, 53).

PROBABLY HAN OR EARLIER. L. 17.31″

A 141-144, Plate LXVIII

The upper parts of two stands, each shown from two points of view. Evidently through the semi-oblate holes in each stem passed a handle of corresponding size and shape, so that the vessel to which it belonged was held in a horizontal position. Perhaps the vessel was a brazier for ironing and pressing clothes, *yün tou*, such as that pictured in FIG. 44, which is reproduced from **183**, xii 1. Perhaps it was the circular shallow dish of a lamp, such as I have seen fitted to a pottery version of A 141-144. At any rate, the lower end of the hollow stem must have been fixed into a wide base like that shown in FIG. 44. The bronze of FIG. 44 bears an inscribed date which probably corresponds to A.D. 229, and this gives a clue of the period of these two stands. ACTUAL SIZE.

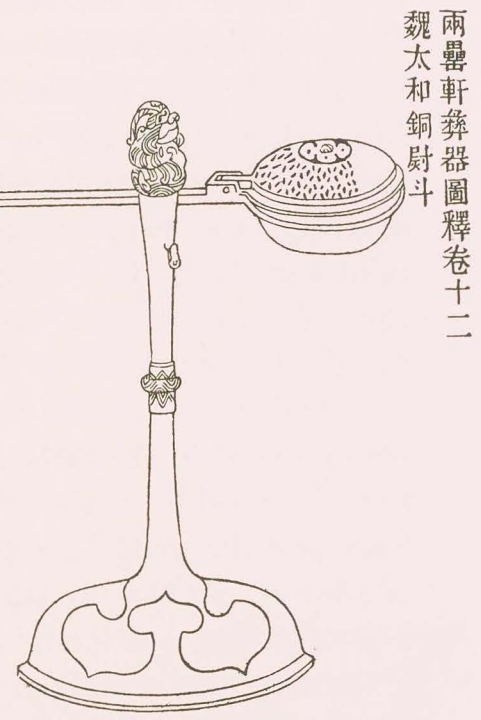


FIG. 44.

A 145, Plate LXIX

Axe head. A rare type. DATE DOUBTFUL. L. 6.12″

A 146, Plate LXIX

Axe head. A rare type. PERHAPS CHOU. L. 5.25″

A 147, Plate LXIX

Head of halberd, *k'uei*. A forerunner of the *ko*, and shafted in like manner (*v.* A 148 and 149). That part of the shorter process which projects beyond the slot in the shaft is inlaid with turquoise in the design of a *t'ao-t'ieh* mask. PROBABLY CHOU. L. 8.5″

A 148 and 149, Plate LXX

Two weapons of the type *ko* (FIG. 46 *f*), numerous examples of which are to be found pictured in Chinese archaeological works, especially in those devoted to epigraphy, since many *ko* are inscribed. These examples vary much as to minor details, but the average proportions conform to the standard laid down in the *K'ao kung chi* section of the *Chou li*: "The *ko* is two inches wide; its *nei* is twice, its *hu* thrice, and its *yüan* four times that measure." Biot's translation and the woodcut he reproduces (**10**, ii 494) reflect the ignorance of archaeological data usually displayed by native commentators of the *Chou li*; and the *San li t'u* contains a still more fanciful misrepresentation of the *ko* (**127**, ix 6). The *nei* is the smaller transverse process, and it has an oblong perforation through which a wedge is driven. The *nei* passes through a slot in the shaft, and that part of it which projects beyond the shaft has often a cutting edge. The *nei* of A 148 and 149 are not so sharpened. *Yüan* is the name of the longer transverse part or blade, and this has both edges sharpened, the lower merging with the outer cutting edge of the *hu* or stem. Characters corresponding to these three names are written on the respective parts in the diagram (FIG. 45), which I have drawn after that published in **136**, text, Fig. 203. The means by which the *ko* is fitted to its shaft or haft had previously been explained by Andersson (**9**, 8) and Karlbeck (**81**, 199-202); but the discoveries of the Japanese archaeologists in Corea enable them to treat the subject more fully and definitely. Besides being slotted for the *nei*, the shaft is grooved to receive a flange which projects from the edge of the *hu*. A cross section is shown in FIG. 45. A single thong (probably of leather) is laced through the three vertically placed holes as shown in the diagram, and firm contact between the bronze head and the shaft is completed with the wedge in the *nei*, as mentioned above. A 149 is represented in FIG. 45 in preference to A 148, which has the lower process of the *hu* missing.

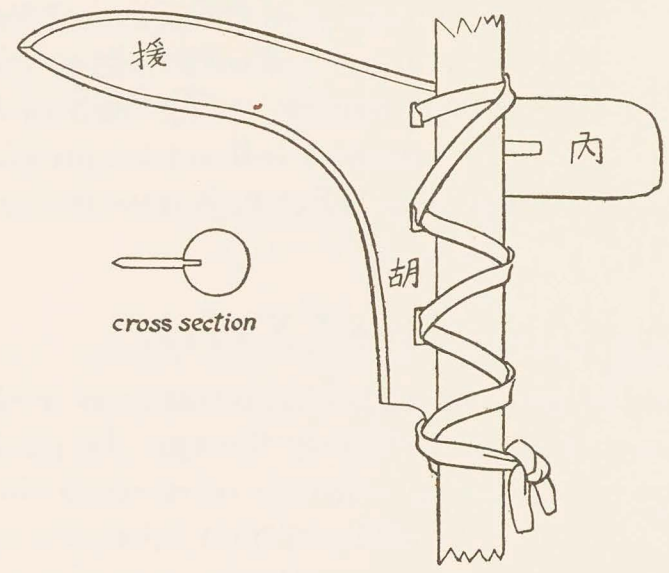


FIG. 45.

Andersson's conclusion that the *ko* is a *hache-poignard* or dagger-axe, comparable with a weapon used in the early Bronze Age of Europe, leaves more to be said. Many of the *ko* known to us bear evidence that they could not be used as halberds, for the space between the thong holes and the wedge slot precludes any but a slender haft. Another clue to the size of the haft is afforded by the bronze butt caps (*v.* A 93-95), and the longer diameter of some of these is no larger than one inch. Note should be made that these butt caps are generally pear-shaped in section; and doubtless the fact indicates how the hafts were shaped throughout their whole length. This would be a natural arrangement, because additional strength is needed in the striking axis; and it is specified in the *K'ao kung chi* (**10**, ii 550). Presumably the flattened and narrower side of the haft is that which is grooved to receive the flange of the *hu*.

On the other hand, certain *ko* are large enough to admit of a stout halberd staff. Twice in the *K'ao kung chi* occurs the statement that the staff of the *ko* has a length of six feet and six tenths (**10**, ii 463, 548). Taking the Chou foot to measure eight English inches, this equals 52.8 inches—the ordinary height of a halberd. Moreover, although the *ko* is not pictured in the Shantung sculptures, its successor, the *chi*, occurs frequently both as a dagger-axe and as a halberd (*v. inf.*). In short, the conclusion seems justified that two sizes of *ko* were used: the smaller to function as a dagger-axe with a short haft of a foot or so, the larger as the head of a halberd.

So far as I am aware, the evolution of the character *ko* has never yet been fully explained. Perhaps this omission is traceable to the habit of native scholars to depend on theoretical speculation rather than archaeological facts. Fortunately the recent excavations of Han

tombs in Corea by Japanese archaeologists illuminate the subject. But before referring to these, I will quote the explanation in the *Shuo wên* under the "Small Seal" form (FIG. 46 *e*): "*Ko*. A flat-headed *chi*. [The character] is composed with *i*, 'staff,' and a horizontal line across it. A pictogram." According to Wang Yün, the words: "composed with *i*, a staff, and a horizontal line across it" is an interpolation by a later hand. As Takata remarks (**143**, xxvi 1), *ko* is surely itself a simple pictogram, not a derivative (*tzŭ*). First, the cross or oblique stroke, regarded together with the tail of the character, is a relic of the three-pronged butt cap which is a prominent feature of many archaic forms (*v.* FIGS. 11 and 46 *b, c, d*). Karlbeck records the finding of many such butt caps in the Huai Valley (**81**, 206 and Fig. 57). Next, the transverse stroke of the character (FIG. 46 *e, f*) clearly represents the two horizontal blades of the *ko*. These probably have for prototypes simple weapons such as A 152 and 153, in the Collection, which are represented pictographically in certain archaic scriptions of *ko* (FIGS. 19, 46 *a*).

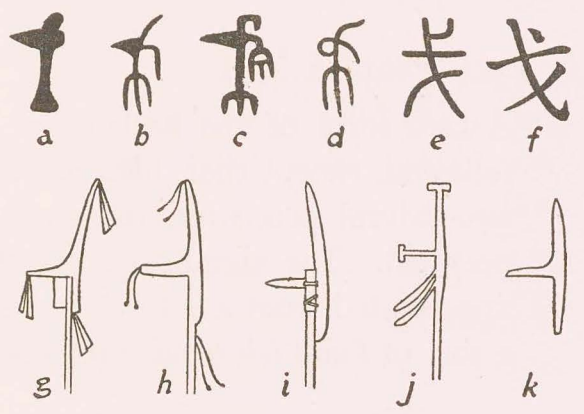


FIG. 46.

Another feature of the "Small Seal" and modern versions remains to be explained; in the former (FIG. 46 *e*) it is an upturned hook, in the latter a dot—probably thus erroneously written through confusion with the ancient form of *i*, "staff." This confusion, perpetuated in the *Shuo wên*, evidently prevailed widely; for many ancient scriptions of *ko* with the upturned hook exist, as may be seen by turning to examples collected by Takata (**143**, xxvi 1-3) and Wang Jên-shou (**163**, xiii 42, 43). On the other hand, most of the archaic forms of *ko* are written with a down-turned hook at the top of the haft or shaft, as will be recognized by reference to these two works. Examples, more or less marked, are given here (FIGS. 11, 19, 46 *a-c*). An intermediate form is FIG. 46 *d*. I venture the surmise that this curved element on the top of the haft is a pictographic representation of the thongs or tassels of the sheath.

Among the Han weapons discovered by Japanese archaeologists in Corea are many iron halberd or dagger-axe heads of the type called *chi*. The drawing of one given here (FIG. 46 *i*) is based on the admirable illustrations in their *Report* (**136**, Text, Figs. 209-216). Iron *chi* evidently replaced the bronze *ko* after the general destruction of bronze weapons decreed by the First Ch'in Emperor (*v. sup.*, pp. 2, 40). This conclusion is justified by the rarity of bronze *ko* among finds of Han objects, the absence of *ko* from Han sculptures, and the large number of *chi* excavated from Han tombs and depicted in the sculptures. Inscriptions on weapons appeal to native archaeologists more strongly than the weapons themselves, and the obliteration through rust of any inscriptions the iron *chi* may have borne probably accounts for the fact that hitherto *chi* have been little known (**136**, Text, 353). The discoveries in Corea prove that both the vertical and horizontal blades of the *chi* had sheaths; some made of wood covered with black lacquer were found (**136**, Text, 354). This fact explains why in the Shantung sculptures some halberd heads are pictured like FIG. 46 *g* and *h*, while some are naked. The pendent tassels, shown in these figures, are evidently the ends of thongs or cords used to lace on the sheaths (*v.* **26**, Figs. 45, 47, 48, 50, 107, 118, 130, and 131). Like forms occur often on stamped tomb bricks of the Han period as heads of the halberds held by sentries or guardians of the portals, *mên t'ing chang*. An example is in the Eumorfopoulos Collection (FIG. 46 *j* and Hobson, *Cat.*, i, PLATE XIII, 81) and another is shown in **135**, Fig. 8.

The presence of sheaths on the *chi*, thus amply proved, suggests that the *ko* which preceded the *chi*, were likewise sheathed. Therefore the theory, formulated above, that the down-turned hook at the top of many archaic scriptions of *ko* represents a tassel of the sheath seems plausible. That this explanation applies to another element occurring in many archaic scriptions of *ko* can scarcely be doubted. I refer to the tassel, hanging from the *nei*, which is shown unusually plainly in FIG. 46 *c*, but less obviously in FIG. 46 *b* and *d*.

Finally, the *chi* may be advanced again as a parallel to the *ko*; this time to support the view that the latter functioned as halberd and dagger-axe. Several of the Shantung sculptures depict both uses, and the *chi* as dagger-axe (FIG. 46 *k*) appears with a very short haft, probably about six inches long (*v.* **26**, Figs. 109, 130, 132, and 137). PROBABLY CHOU.

A 148. L. 6.93″

A 149. L. 6.68″

A 150, Plate LXX

A rare form of the halberd or dagger-axe, *ko*. The usual method of shafting or hafting is followed, except that, instead of a wedge passing through a slot in the *nei*, a pin transfixes the two lateral processes, the shaft and the *nei*. This pin remains *in situ*, the wood having perished. The significance of the two eyes and two curved lateral processes may hardly be appreciated from a side view, showing only one of each pair. These features combine to form a sort of *t'ao-t'ieh* mask with open jaws. Note also another mask in sunk outline on the *nei*.

PROBABLY CHOU. L. 18.93″

A 151, Plate LXXI

Axe head showing "Scythian" design. DATE DOUBTFUL. L. 5.24″

A 152, Plate LXXI

Head of halberd, *k'uei*. A forerunner of the *ko*, and shafted in like manner (*v.* A 148 and 149). Concerning the inscription *v.* FIG. 31 and pp. 26 and 27. PROBABLY LATE CHOU. L. 10.06″

A 153, Plate LXXI

Head of halberd, *ch'ü*. A forerunner of the *ko*. The *nei* passes through a slot in the shaft, but the thongs, instead of being threaded through holes, are laced round the two small vertical processes. PERHAPS CHOU. L. 9.87″

A 154, Plate LXXI

A knife. PERHAPS CHOU. L. 10.75″

A 155, Plate LXXII

Sword, *chien*. A numerous type. The inscription is reproduced in FIG. 34.

PERHAPS LATE CHOU. L. 16.25″

A 156, Plate LXXII

Sword, *chien*. A "Scythian" type found in various stages of evolution over a wide area stretching from Hungary to Japan. A characteristic feature is the pommel with in-curved forms; the prototype takes the shape of a pair of confronted beak-heads, so numerous among the Siberian daggers, or beasts curled towards each other, well exemplified in a sword found at Aldoboly, Hungary (*v.* Minns, *Scythians and Greeks*, 69). In later and longer specimens the curls degenerate into *antennae*, like those of the Hallstadt sword (Minns, *op. cit.*, 189), and a further stage is when the curls turn down and join the pommel, as they do here, and thus lose semblance of their zoomorphic forerunners. One closely resembling A 156 was excavated in the Province of Kiūshiū, Japan (**45**, 49, pl. XIV 3). DATE DOUBTFUL. L. 20.32″

A 157, Plate LXXII

Knife. PERHAPS CHOU. L. 8.12″

A 158 and 159, Plate LXXII

Two views of a bronze handle for an iron blade which has perished. The handle is slotted along two-thirds of the convex edge in order to receive the blade. DATE DOUBTFUL. L. 5.31″

A 160, Plate LXXIII

A dagger. DATE DOUBTFUL. L. 11.37″

A 161, 162, and 165, Plate LXXIII

Three heads of spears, *mao*. The ring on A 161 probably is for the attachment of the sheath. A fragment of a wooden sheath tied with string to such a ring was found in Corea (**136**, pl. 206).

DATE DOUBTFUL.

A 161. L. 7.88″

A 162. L. 6.93″

A 165. L. 9.88″

A 163 and 164

Two views of a socketed celt (*cf.* **105**, 14). PROBABLY CHOU. L. 5.32″

A 166, Plate LXXIV

Double axe, gilt and engraved with bird and scroll design. PERHAPS HAN. L. 8.12″

A 167, Plate LXXIV

A miniature knife, perhaps for the erasing of writing. DATE DOUBTFUL. L. 3″

A 168, Plate LXXIV

Knife, perhaps for the erasing of writing. DATE DOUBTFUL. L. 5.63″

A 169, Plate LXXIV

Possibly a pestle. Gilt. DATE DOUBTFUL. L. 6.48″

A 170, Plate LXXIV

Fragment of spear head. DATE DOUBTFUL. L. 5.56″

A 171, Plate LXXIV

Spatula, use unknown. The blade is curved. Apparently stones originally formed the eyes of the head at the end of the handle. The tongue moves freely on a pin. DATE DOUBTFUL. L. 13″

A 172, Plate LXXV

Axe, *ch'i*, of unusual size. DATE DOUBTFUL. H. 14.5″

BIBLIOGRAPHY

NOTE.—Completeness is not claimed for the following list; it comprises works consulted in the preparation of this volume. References in the foregoing text are made by quoting the numerals which here precede the respective titles; and the edition indicated is that first entered, if more than one are noted. Names of the authors and the titles of Chinese and Japanese writings are repeated in native script on pages 83-86. The following abbreviations are used: *BEFEO* for *Bulletin de l'École Française d'Extrême-Orient; c.* for *chüan* or chapter; CTP for collotype; ff. for folios; *H.* for *hao* or pseudonym; *JA* for *Journal Asiatique*; *JRAS* for *Journal of the Royal Asiatic Society*; PHL for photo-lithographed edition; *T.* for *tzŭ*, name or style; and WB for wood-block edition.

ANONYMOUS

1 *Collection of Chinese Bronze Antiques.* CTP pls. 52 and descriptive notes in Japanese and English. Tokyo: 1910.

2 *Êrh ya.* A thesaurus of terms and phrases, arranged under 19 categories. Attributed to Chou period. 3 *c.*, WB 1874, with Kuo P'o's commentary.

3 *Hsi-ch'ing hsü chien.* A supplement to **4**, containing 975 objects subsequently added to the imperial collection. 20 *c.* and appendix, 44 ff. PHL 1910, reproducing the MS. compiled by an imperial commission, and finished in 1793.

4 *Hsi-ch'ing ku chien.* Illustrated catalogue of bronzes in the imperial collection. 56 *c.*, PHL 1908, reproducing large edition, engraved on copper and dated 1749, compiled by an imperial commission.

5 *Hsü k'ao ku t'u.* Illustrated catalogue of bronze, jade, and pottery objects. 5 *c.*, followed by *Shih wên, Explanation of Inscriptions*, ff. 29, by Chao Chin-ch'êng, who perhaps compiled the catalogue. Reprinted, WB 1892, from a Sung copy, and included in the miscellany *Shih wan chüan lou ts'ung shu.*

6 *I shu ts'ung pien.* A bi-monthly illustrated magazine of art and archaeology. 24 parts. Shanghai: 1916-1920.

7 *Kuang yün.* A phonetic dictionary in which the pronunciation is given by the syllabic method (*fan-ch'ieh*). Arranged according to 206 finals, classed under the 4 tones. 5 *c.*, WB 1704, edited, together with **87**, by Chu I-tsun. It is essentially the same work as *Ch'ieh yün* (601) and *T'ang yün* (751) but revised 1011 by an imperial commission of which Ch'ên P'êng-nien was a member (*v.* **87**). *v.* Pelliot, *BEFEO*, ii 316-319; viii 524; and **126**, 11-17, 110-114.

8 *Ning-shou chien ku.* Illustrated catalogue of 700 bronze objects in the imperial collection, supplementary to **3** and **4**. 16 *c.*, PHL 1913, reproducing the MS. compiled by an imperial commission.

ANDERSSON, J. G.

9 *An Early Chinese Culture.* Pp. 68; pls. 17. From *Bull. Geological Survey of China*, No. 5. Peking: 1923.

BIOT, E.

10 *Le Tcheou-li.* 2 vols. Paris: 1851.

BUSHELL, S. W.

11 *The Stone Drums of the Chou Dynasty.* Article in *Jour. N.-China Br. Roy. Asiatic Soc.*, viii (1874), pp. 133-179.

CHALFANT, F. H.

12 *Early Chinese Writing.* In *Memoirs of the Carnegie Museum*, iv (1906), No. 1. Pp. 35; pls. 50.

CHALMERS, J.

13 *An Account of the Structure of Chinese Characters.* Second edition; pp. 107. Shanghai: 1911.

14 *On the Term chuan chu as applied to Chinese Characters.* Article in *China Rev.*, xvi (1887-8), pp. 25-31.

CHANG HUI-YEN, *T.* KAO-WÊN

15 *I li t'u.* Illustrated commentary on the *I li.* 6 *c.*, WB 1870. Preface, dated 1805, by Juan Yüan.

CHANG TÊ-JUNG, *T.* SHAO-WEI, *H.* SUNG-P'ING

16 *Êrh ming ts'ao t'ang chin shih chu.* Facsimiles of inscriptions, mostly cut on stone, dating from earliest times to sixth century. 16 *c.*, WB about 1872.

CHANG T'ING-CHI, *T.* SHU-WEI

17 *Ch'ing i ko so tsang ku ch'i wu wên.* Reproductions of inked-squeezes taken from various inscribed objects, with notes. Published by Hsü Chün assisted by Ch'u Tê-i, each of whom writes a preface. 10 *ts'ê*, PHL 1924.

CHANG YEN-CH'ANG, *T.* CH'I-T'ANG, *H.* WÊN-YÜ AND CHIN-SU SHAN-JÊN

18 *Chin shih ch'i.* Illustrated treatise on various inscribed objects. 4 *pên*, WB 1778. Another WB 1896.

19 *Shih ku wên shih ts'un.* An explanation of the Stone Drum inscriptions. Ff. 44, WB 1902. First edition 1788.

CHAO HSI-KU

20 *T'ung t'ien ch'ing lu.* Archaeological notes on ancient bronzes and other objects. Ff. 42, WB 1795. Written thirteenth century.

CHAO MING-CH'ÊNG, *T.* TÊ-FU

21 *Chin shih lu po wei.* A catalogue of 2,000 inscriptions dating from earliest time to the tenth century, followed by notes. 30 *c.*, WB 1762. The third preface, dated 1132, is written by the author's wife and famous poetess, Li I-an.

CHAVANNES, E.

22 *La Divination par l'Écaille de Tortue dans la haute Antiquité chinoise.* Article in *JA* (Jan.-Feb.) 1911, pp. 127-137.

23 *Les Documents Chinois découverts par Aurel Stein.* Pp. 255; pls. 37. Oxford: 1913.

24 *Les Livres chinois avant l'Invention du Papier.* Article in *JA* (Jan.-Feb.) 1905, pp. 5-75.

25 *Les Mémoires historiques de Se-ma Ts'ien.* 5 vols. Paris: 1895-1905.

26 *Mission archéologique dans la Chine septentrionale.* Text, 2 vols.; pls. 488 in portfolios. Paris: 1909-1915.

CH'ÊN CHING, *T.* PAO-CHIH

27 *Ch'iu ku ching shê chin shih t'u.* An illustrated and annotated catalogue of various inscribed objects—bronze vessels, weapons, mirrors, seals, etc., tiles and bricks. Prefaces by several famous archaeologists. 4 *c.*, WB 1817.

CH'ÊN HSI-CH'IH, *T.* TAN-CHIEH

28 *Chin shih chai.* Reproductions of famous inscriptions dating from earliest time to the present. 16 *pên.* WB about 1876.

CH'ÊN SSŬ

29 *Pao k'o ts'ung pien.* An index of ancient inscribed monuments classified according to locality. Written about 1240. *c.* 20, several of which are now incomplete. *v.* Pelliot, *BEFEO*, ix 233. Reprinted, WB 1892, in the miscellany *Shih wan chüan lou ts'ung shu.*

CHÊNG CH'IAO, *T.* YÜ-CHUNG

30 *Ch'i yin liao.* A tabulated study of the pronunciation of Chinese characters as compared with Sanskrit. 2 *c.*, forming the 36th and 37th *c.* of *T'ung chih*, which was finished about 1161.

31 *Liu shu liao.* A treatise on the Six Scripts. 5 *c.*, forming 31st to 35th *c.* of *T'ung chih.*

32 *Shih ku wên.* On the Stone Drum inscriptions. 3 *c.*

CHIANG HUNG-YÜAN AND OTHERS

33 *Hsin-chêng ch'u t'u ku ch'i t'u chih.* An illustrated account of ancient objects, including 91 of bronze, excavated in 1923 from a tomb at Hsin-chêng in Honan. 3 *ts'ê*; 101 CTP illustrations, most of which are indistinct. Hankow: 1924.

CH'IEN TIEN, *T.* HSIEN-CHIH, *H.* SHIH-LAN

34 *Shih liu ch'ang lo t'ang ku ch'i k'uan chih.* An illustrated and descriptive catalogue of ancient objects, including bronzes. 2 *c.*, WB 1796.

CHOU MI, *T.* KUNG-CHIN, *H.* TS'AO-CH'UANG AND HSIAO-CHAI

35 *Yün yen kuo yen lu.* Notes on ancient objects in various collections. Mostly about pictures, but some bronzes are discussed. 2 *c.*, 13th century. Reprint, WB 1892, in the miscellany *Shih wan chüan lou ts'ung shu*, where followed by **146**.

CH'U TÊ-I (TCH'OU TÖ-YI)

36 *Bronzes antiques de la Chine.* Pp. 68, pls. 40. Paris and Brussels: 1924.

CHU TSUN-SHÊNG, *T.* FÊNG-CH'I, *H.* YÜN-CH'IEN

37 *Shuo wên t'ung hsün ting shêng.* A dictionary based on that of Hsü Shên (*q.v.*), but rearranged under 18 phonetics, and including many more characters. 48 *pên*, WB 1852.

BIBLIOGRAPHY

COUVREUR, S.

38 *I li : Cérémonial.* Pp. 667. Hsien Hsien : 1916.

39 *Li ki.* 2 vols. Second edition. Ho-chien Fu : 1913.

FÊNG YÜN-P'ÊNG AND FÊNG YÜN-YÜAN

40 *Chin shih so.* An illustrated treatise on inscribed objects. 12 *pên* in 2 sections ; the first treating of bronzes and other metal objects, the second of carved stone and inscribed tiles and bricks. WB 1822 ; PHL 1893.

FERGUSON, J. C.

41 *A Bronze Table, with Accompanying Vessels.* Pp. 38 (half in Chinese) and 15 PHL reproductions of inked-squeezes. Peking : 1924.

42 *An Examination of Chinese Bronzes.* Article in *Annual Report of Smithsonian Institution.* Pp. 587-592, pls. 14. Washington : 1914.

FORKE, A.

43 *Der Ursprung der Chinesen auf Grund ihrer alten Bilderschrift.* Pp. 31. Hamburg : 1925.

FRANKE, O.

44 *Der Ursprung der chinesischen Geschichtschreibung.* Article in *Sitzungsberichte d. Preuss. Akad. d. Wissenschaften,* xxiii (1925), 276-309.

FUJITA RYŌSAKU, UMEHARA SUEJI, KOIZUMI AKIO

45 *Minami-Chōsen ni okeru Kan-dai no iseki.* On relics of the Han period found in Southern Corea. Pp. 170, CTP pls. 128. Kyōto : 1922.

GILES, H. A.

46 *Chinese Bronzes.* Article in *Adversaria Sinica,* No. 9, pp. 283-297. Shanghai : 1911.

GRANET, M.

47 *Fêtes et Chansons anciennes de la Chine.* Pp. 305. Paris : 1919.

48 *Danses et Légendes de la Chine ancienne.* Pp. 710. Paris : 1926.

HAMADA KŌSAKU

49 *Sen-oku sei-shō iki-bu.* Part I of catalogue of Chinese bronzes in the Sumitomo Collection. 3 vols. CTP reproductions of 171 objects and notes in Japanese. Second edition, 1924. First edition, 1919.

50 *Explanatory Notes on Sen-oku sei-shō.* Descriptive text in English of the foregoing. Pp. 45. Second edition, 1924. First edition, 1921.

51 *Sen-oku sei-shō iki-bu kaisetsu.* Descriptive text in Japanese of **49**, and CTP reproductions of inscriptions. Ff. 89.

52 *Sen-oku sei-shō zokuhen.* Additional vol. No. 1. CTP reproductions of 60 objects. Notes in Japanese and English. 1927.

HOPKINS, L. C. AND HOBSON, R. L.

53 *A Royal Relic of Ancient China.* Article in *Man,* Ap., 1912, pp. 49-52.

HOPKINS, L. C.

54 *The Archives of an Oracle.* Articles in *JRAS,* 1915, pp. 49-61, 289-303.

55 *The Chinese Numerals and their Notational Systems.* Articles in *JRAS,* 1916, pp. 315-333, 737-771.

56 *A Chinese Pedigree on a Tablet-disk.* Article in *JRAS,* 1913, pp. 905-910.

57 *Chinese Writing in the Chou Dynasty in the Light of Recent Discoveries.* Article in *JRAS,* 1911, pp. 1011-1034.

58 *The Development of Chinese Writing.* Pp. 20. China Soc., 1910.

59 *Dragon and Alligator.* Article in *JRAS,* 1913, pp. 545-552.

60 *L'Écriture dans l'ancienne Chine.* Article in *Scientia,* 1920, pp. 19-40.

61 *A Funeral Elegy and a Family Tree inscribed on Bone.* Article in *JRAS,* 1912, pp. 1021-1028.

62 *Metamorphic Stylization and the Sabotage of Significance.* Article in *JRAS,* 1925, pp. 451-478.

63 *On Chinese Characters.* Article in T. L. Bullock's *Chinese Written Language,* third edition, pp. 15-21. Shanghai : 1923.

64 *On a Newly Discovered Early Chou Inscribed Bronze.* Centenary Supp. to *JRAS,* 1924, pp. 1-10. Followed by note in *JRAS,* 1926, pp. 301-4.

65 *Pictographic Reconnaissances.* Articles in *JRAS,* 1917, pp. 773-813 ; 1918, pp. 387-431 ; 1919, pp. 369-388 ; 1922, pp. 49-75 ; 1923, pp. 383-391 ; 1924, pp. 407-434 ; 1926, pp. 461-486 ; 1927, pp. 769-789 ; 1928, pp. 327-337.

HOPKINS, L. C.—*continued*

66 *The Royal Genealogies of the Honan Relics and the Record of the Shang Dynasty.* Article in *Asia Major*, 1922, pp. 194-205.

67 *The Six Scripts.* Pp. 81. Amoy: 1881.

68 *The Sovereigns of the Shang Dynasty.* Article in *JRAS*, 1917, pp. 69-89.

69 *The Wind, the Phœnix, and a String of Shells.* Note in *JRAS*, 1917, pp. 377-383.

70 *Working the Oracle.* Articles in *New China Rev.*, 1919, pp. 111-119, 249-261.

HSIEH SHANG-KUNG, *T.* YUNG-MIN

71 *Li tai chung ting i ch'i k'uan chih fa t'ieh.* 20 *c.* WB reproductions of inscriptions with notes. Compiled from various sources and added to by Juan Yüan in 1797. The earliest accessible edition of the 12th century original.

HSÜ SHÊN, *T.* SHU-CHUNG

72 *Shuo wên chieh tzŭ.* Compiled A.D. 986 by an imperial commission presided over by Hsü Hsüan. An attempt to restore the original work of A.D. 121, but many corrections and additions made, including pronunciation according to the 8th century dictionary *T'ang yün*, a forerunner of **7**. PHL (undated) of a Sung copy in the T'êng-hua Hsieh Library.

HSÜ WEI-JÊN, *T.* WÊN-T'AI, *H.* TZŬ-SHAN

73 *Sui hsien chin shih wên tzŭ.* Reproductions in outline of 9 famous inscriptions, some annotated. 4 *pên*, WB 1868, a reprint of first edition of 1843.

HUANG LI-YU

74 *Chin shih shu mu.* A bibliography of epigraphy, including some 800 works. 10 *c.* Peking: 1926.

HUNG KUA, *T.* CHING-PO

75 *Li shih.* A collection of inscriptions, mostly of Han period. 27 *c.* and appendix 21 *c.* WB 1776. First complete edition, 1181.

JUAN YÜAN, *T.* PO-YÜAN, *H.* YÜN-T'AI

76 *Chi ku chai chung ting i ch'i k'uan chih.* Facsimiles of inscriptions on bronzes, deciphered and annotated. 10 *c.* WB 1804.

JUNG KÊNG

77 *Chia ku wên tzŭ chih fa chien chi ch'i k'ao shih.* A review of writings concerning the inscriptions on the Honan Finds. Article in *Kuo hsüeh chi k'an* (*Journal of Sinological Studies*), i (1923), pp. 655-674.

78 *Han tai fu yü ch'i k'ao liao.* On some Han dynasty utensils. Article in *Yen-ching hsüeh pao* (*Yenching Journal*), No. 3 (1928), pp. 403-416.

79 *Yin Chou li yo ch'i k'ao liao.* An illustrated study of ritual bronzes under the Yin and Chou dynasties. Article in same, No. 1 (1927), pp. 83-142.

KANDA KÜCHIRŌ

80 *Sung tai chin shih shu mu.* A list of 47 Sung works on epigraphy, of which 30 are lost. Article in *Shinagaku*, iii (1925), pp. 989-992.

KARLBECK, O.

81 *Ancient Chinese Bronze Weapons.* Articles in *China Jour. of Science and Arts*, iii (1925), pp. 127-132, 199-206.

KARLGREN, B.

82 *Analytic Dictionary of Chinese and Sino-Japanese.* Pp. 436. Paris: 1923.

83 *Études sur la Phonologie chinoise.* Pp. 700. Leiden and Stockholm: 1915.

84 *Philology and Ancient China.* Pp. 167. Oslo, etc.: 1926.

85 *Sound and Symbol in Chinese.* Pp. 112. London: 1923.

KOOP, A. J.

86 *Early Chinese Bronzes.* Pp. 85, pls. 110. London: 1924.

KU YEH-WANG, *T.* HSI-FÊNG

87 *Yü p'ien.* A dictionary, published 543, which was the first to give pronunciation by dividing sounds into initials and final syllables (*fan-ch'ieh*). Except for a fragment found in Japan, the original is lost, the extant text being that of Ch'ên P'êng-nien, who was one of the compilers of **7**. *v.* Pelliot, *BEFEO*, ii 323-326. 30 *c.* WB 1704, in 2 *c.* edited together with **7** by Chu I-tsun.

BIBLIOGRAPHY

KU YING-T'AI, *T.* KÊNG-YÜ

88 *Po wu yao lan.* Essays on various objects valued by collectors. Probably written in middle of 17th century and remained in MS. till edited and enlarged by Li T'iao-yüan, who published it 1782 in *Han hai. v.* Pelliot, *T'oung Pao*, 1927, pp. 103-5. 16 *c.*

KÜMMEL, O.

89 *Chinesische Bronzen.* Articles in *Ostasiatische Zeitschrift*, vi (1917-18), pp. 267-278; vii (1918-19), pp. 126-131.

90 *Chinesische Bronzen.* An illustrated catalogue of 26 bronzes in the Staatlichen Museum, Berlin. Pp. 16, CTP pls. 35. Berlin: 1928.

LAUFER, B.

91 *Archaic Chinese Bronzes.* Pp. 26, pls. 10. New York: 1922.

92 *The Bird Chariot in China and Europe.* Article in *Boas Anniversary Vol.*, pp. 410-424. New York: 1906.

93 *Chinese Pottery of the Han Dynasty.* Pp. 355, CTP pls. 75. Leiden: 1909.

LEGGE, J.

94 *The Chinese Classics.* 5 vols., of which 1 and 2 are revised and dated Oxford: 1893 and 1895 respectively. Vols. 3-5, Hongkong: 1865-1872.

LI KUANG-T'ING, *T.* P'U-YÜAN, *H.* WÊNG-CHAI LAO-JÊN

95 *Chi chin chih ts'un.* Illustrations of bronzes, tiles, and bricks. 4 *c.* WB 1859.

LI YU-SUN, *T.* CH'ING-PO, *H.* CHIN-LAN

96 *Chin shih hsüeh lu.* Biographies of some 450 collectors and students of ancient bronzes and inscriptions who lived from 6th century onward. 4 *c.* WB 1824.

LIU HSI-HAI, *T.* YEN-T'ING

97 *Ch'ang-an huo ku pien.* Pictures of bronzes and tiles. 2 *c.* WB, undated.

98 *Chin shih yüan.* Annotated facsimiles of inscriptions, mostly on stone, from Han to Sung. 6 *pên.* PHL (undated) of WB 1846.

LIU HSIN-YÜAN, *T.* YU-TAN

99 *Chi ku shih chi chin wên shu.* Reproductions of inked-squeezes from inscriptions on bronzes, with commentary. 20 *c.* PHL (undated) of MS. 1902.

LIU O, *H.* T'IEH-YÜN

100 *T'ieh-yün tsang kuei.* Reproductions of inked-squeezes of inscriptions on bone fragments from the Honan Finds, with preface and introduction. 6 *pên.* PHL 1903.

101 *T'ieh-yün tsang t'ao.* Reproductions of inked-squeezes from inscriptions on ancient pottery, and of impressions from clay seals. 4 *pên.* PHL 1903.

LIU SHIH-HÊNG

102 *Chin shih t'u shuo.* Miniature facsimiles of inked-squeezes from inscriptions (mostly on stone) down to T'ang period. It embodies works by Ch'u Hsün and Niu Yün-chên, 1743 and 1745. 4 *c.* WB 1894.

LO CHÊN-YÜ, *T.* SHU-YEN, *H.* SHU-YÜN AND YUNG-FÊNG HSIANG-JÊN

103 *Chin ni shih hsieh.* Illustrations of ancient metal, pottery, and stone objects; mostly from inked-squeezes. Brief notes. 2 *c.* CTP 1916. Published also in **6**, Nos. 1-6.

104 *Ch'in chin shih k'o tz'ŭ.* Reproductions of inked-squeezes from various inscriptions of the Ch'in period. 3 *c.* PHL 1914.

105 *Hsüeh t'ang so tsang ku ch'i wu t'u.* Illustrations of various ancient objects; pottery, metal, jade, moulds, tomb figures, seals, etc. Ff. 42. CTP 1923.

106 *Ku ch'i wu fan t'u lu.* Illustrations of moulds for weapons, mirrors, coins, etc., with text. Probably the first Chinese book devoted to this subject. 3 *c.* CTP 1916. Published also in **6**, Nos. 1, 3-6.

107 *Mêng i ts'ao t'ang chi chin t'u.* Illustrations of various inscribed objects, mostly bronzes, dating from Shang-Yin to Ming. 3 *c.* and supplement ff. 66; CTP 1917 and 1918 respectively.

108 *Shih ku wên k'ao shih.* A study of the Stone Drum inscriptions. Ff. 41. CTP and PHL 1916.

109 *T'ieh-yün tsang kuei chih yü.* Supplementary to **100**, with preface. Ff. 18. PHL reprint 1927. First edition, 1915.

110 *Tu pei hsiao chien.* Epigraphic notes. Ff. 33. WB 1884.

111 *Wu shih jih mêng hên lu.* A diary of archaeological quests. Ff. 37, 1915. In miscellany *Hsüeh t'ang ts'ung k'o*, undated.

LO CHÊN-YÜ, *T.* SHU-YEN, *H.* SHU-YÜN AND YUNG-FÊNG HSIANG-JÊN—*continued.*

112 *Yin hsü ku ch'i wu t'u lu.* Illustrations of and notes on ancient objects obtained by the author's brother at the site of the Honan Finds. 23 ff. CTP 1916. Published also in **6**, Nos. 4-6.

113 *Yin hsü shu ch'i ch'ien pien.* Reproductions of ink-squeezes from inscriptions on Honan Finds, being those studied in **116**. 8 *c.* CTP 1912.

114 *Yin hsü shu ch'i hou pien.* Continuation of foregoing. 2 *c.* CTP 1916. Published also in **6**, Nos. 1-6.

115 *Yin hsü shu ch'i ching hua.* Photographs of some large and a few small inscribed bones from the Honan Finds. Pp. 13. CTP 1914.

116 *Yin hsü shu ch'i k'ao shih.* Interpretations of the forms reproduced in **113** and **114**, which are here arranged in 8 sections. 3 *c.* PHL. Revised edition (*tsêng ting*), 1927. First edition 1914.

117 *Yin hsü shu ch'i tai wên pien.* An index of 1001 unidentified forms (exclusive of variants) which appear in **113** and **114**. Ff. 52. PHL 1916.

118 *Yin-Shang chên pu wên tzŭ k'ao.* An initial study of the divinatory inscriptions on the Honan Finds. Ff. 32. PHL 1910.

119 *Yin wên ts'un.* Reproductions of inked-squeezes from inscriptions on Shang-Yin bronzes 2 *c.* PHL 1917. Published also in **6**, Nos. 8-12.

LOU CHI, *T.* YEN-FA

120 *Han li tzŭ yüan.* A dictionary of various forms of Official Script (*li shu*) taken from inscriptions on stone monuments of second century B.C. to fifth century A.D. Classified according to rhyme. 6 *c.* WB 1877. Preface dated 1197.

LU HSIN-YÜAN, *T.* KANG-FU AND CH'IEN-YÜAN, *H.* TS'UN-CHAI

121 *Chin shih hsüeh lu pu.* Supplementary to **96**. Contains some 330 biographies of collectors and students who lived from fourth century onward. 3 *c.* WB 1886.

LU YAO-YÜ, *T.* SHAO-WÊN, *H.* SHAO-WÊN

122 *Chin shih hsü pien.* Texts of inscriptions from Han period to thirteenth century. 21 *c.* WB 1924, revised and enlarged by Lo Chên-yü. Original edition, 1874.

LÜ TA-LIN, *T.* YÜ-SHU

123 *K'ao ku t'u.* The earliest extant illustrated catalogue of antiquities. Mainly bronzes; a few jade objects are included. Author's preface dated 1092. The provenance of objects is often noted, and a list is given of 40 collections drawn upon. 10 *c.* WB 1753, edited by Huang Shêng. Many editions; present pictures unreliable.

MA HÊNG

124 *Shih ku wei Ch'in k'o shih k'ao.* In defence of the theory that the Stone Drum inscriptions were made in the third century B.C. Article in *Kuo hsüeh chi k'an*, i (1923), pp. 17-26.

MASPERO, H.

125 *La Chine antique.* Pp. 641, maps 3. Paris: 1927.

126 *Le Dialecte de Tch'ang-ngan.* Article in *BEFEO*, xx (1920), No. 2, pp. 124.

NIEH CH'UNG-I

127 *San li t'u.* An illustrated attempt to reconstruct the ritual paraphernalia of antiquity, based on earlier works of the same title. Submitted to the Throne 962. 20 *c.* WB 1676, revised by Na-lan Ch'êng-tê. Contained in the miscellany *T'ung chih t'ang ching chieh.* *v.* Demiéville, *BEFEO*, xxv 216-219.

OMURA SEIGAI

128 *Kwakkō zuroku.* An illustrated catalogue of an exhibition at Osaka in 1923 by Yamanaka and Co. 2 vols. CTP pls. 115 with descriptive notes. Osaka: 1923.

129 *Shina bijutsu shi chōsoku hen.* A history of Chinese sculpture. Text pp. 702. Tokyo: 1915. Portfolio CTP pls. 433, reprinted Tōkyō: 1920.

OU-YANG FEI

130 *Chi ku lu mu.* A catalogue, supplementary to **131**, of over 500 inscriptions dating from Han to Five Dynasties. Author's preface 1069, and one 1063 by his father Ou-yang Hsiu. 5 *c.* WB 1888, edited by Chu Chi-jung, in the collection *Hsing so-ts'ao t'ang chin shih ts'ung shu.*

OU-YANG HSIU, *T.* YUNG-SHU, *H.* TSUI-WÊNG AND LIU-I CHÜ-SHIH

131 *Chi ku lu po wei.* Notes on over 400 inscriptions dating from earliest times to Five Dynasties. Middle eleventh century. 10 *c.* WB 1888, in same collection as **130**.

P'AN TSU-YIN, *T.* PO-YIN, *H.* CHÊNG-AN

132 *P'an ku lou i ch'i k'uan chih.* Pictures of inscribed bronzes, facsimiles of the inscriptions, and notes thereon. 2 *ts'ê.* WB 1914, from recut blocks. First edition, 1872.

PELLIOT, P.

133 *Le Chou king en Caractères anciens et le Chang chou che wen.* Article in *Mém. conc. l'Asie orientale,* ii (1916), pp. 123-177.

PETRUCCI, R.

134 *L'Épigraphie des Bronzes rituels de la Chine ancienne.* Article in *JA* (Jan.-Feb.) 1916, pp. 5-76.

ROSTOVTZEFF, M.

135 *Inlaid Bronzes of the Han Dynasty.* Pp. 77, pls. 20. Paris and Brussels: 1927.

SEKINO TADASHI AND OTHERS

136 *Rakurō-gun jidai no iseki.* Report on excavations of Han tombs on the south bank of the Ta-t'ung (Daidō) River, Corea. 2 vols. of pls. (Parts 1 and 2) mostly CTP; figs. 1334 and 2 maps: 1915. 1 vol. of text, pp. 400, figs. 300 (mostly CTP) and 1 map: 1927. Published by Government-General of Chosen.

SELIGMAN, C. G.

137 *Bird-chariots and Socketed Celts in Europe and China.* Article in *Jour. Roy. Anthrop. Inst.* (1920), pp. 153-158.

138 *Further Note on Bird-chariots in Europe and China. Id.,* lviii (1928), pp. 247-254.

SUN I-JANG, *T.* CHUNG-JUNG, *H.* CHOU-KAO CHÜ-SHIH

139 *Ch'i wên chü li.* A pioneer study of inscriptions on the Honan Finds. 2 *c.* PHL 1927. Preface dated 1904.

140 *Ku chou shih i.* Certain inscriptions on bronzes are discussed, and the comments thereon by previous writers criticized. Dated 1872. 3 *c.* WB 1891, preceded by **141**.

141 *Sung chêng-ho li ch'i wên tzŭ k'ao.* Notes on pseudo-archaic inscriptions on ritual vessels made during the *chêng-ho* period (1111-1118). Ff. 20. WB 1891, together with **140**.

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142 *Liu shu ku.* An account of characters classified under the Six Scripts. 33 *c.* WB 1784. The introductory " General Explanation " (*Liu shu t'ung shih*) is translated in **67**.

TAKATA TADASUKE

143 *Ku chou p'ien.* A dictionary of ancient Chinese script. Based on *Shuo wên,* the 543 classifiers of which are here increased to 624. On the 10,082 characters treated, 9953 appear in *Shuo wên.* Examples are gathered from all sources, and often the part or whole of the inscription is cited. 100 *c.*; and in addition the prefaces, indexes, and supplement total *c.* 18 and ff. 113.

144 *Hsiao ku fa fan.* A *résumé* on the origin and development of writing, and on conclusions derived from inscriptions. 8 *c.*

145 *Chuan chu chia chieh shuo.* A discussion of the two most debatable classes among the Six Scripts. Ff. 57. The three foregoing comprise 68 vols. in 13 cases. Tokyo: 1925.

T'ANG YÜN-MO, *T.* CHUNG-MOU

146 *Yün yen kuo yen lu hsü chi.* A supplement to **35.** Ff. 8. Reprint, WB 1892, in the miscellany *Shih wan chüan lou ts'ung shu.*

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147 *Shuo wên ku chou pu pu.* A collection of pre-Ch'in script supplementary to **180**, adding some 700 leading characters and some 2,100 variants not in **180**. Many copied from newly excavated bronzes. 14 *c.* and appendix ff. 28. PHL 1926.

TS'AI T'ING-KAN

148 *Ku chou p'ien chien shou chien tzŭ.* Supplementary indexes to **143**. Ff. 28. 1927.

TS'AO CHAO, *T.* MING-CHUNG

149 *Ko ku yao lun.* Notes on various antiquities, writings, and objects of art. 13 *c.* WB undated. First edition, 1388; second, 1459, revised and enlarged by Wang Tso.

TS'AO TSAI-K'UEI, *T.* CH'IU-FANG

150 *Huai mi shan fang chi chin t'u.* Pictures of 60 bronzes and facsimiles of the inscriptions thereon and notes. The author had these engraved on stone in 1839. 2 *ts'ê.* CTP 1922 from inked-squeezes of these. An outline WB was made 1882 in Japan, and later a small PHL of this.

TSOU AN, *T.* SHIH-LU (formerly named TSOU SHOU-CH'I, *T.* CHING-SHOU)

151 *Chou chin wên ts'un.* Reproductions of inked-squeezes taken from inscribed bronzes, with notes. 6 *c.* PHL 1921. Published also in **6**, Nos. 1-24.

TUAN FANG, *T.* T'AO-CHAI, *H.* WU-CH'IAO

152 *T'ao-chai chi chin hsü lu.* A supplement to **153**. 2 *c.* PHL 1909, of MS. and inked-squeezes of inscriptions.

153 *T'ao-chai chi chin lu.* Drawings of bronzes in the author's collection, inked-squeezes of inscriptions, and brief notes. 8 *c.* PHL 1908.

TUAN YÜ-TS'AI, *T.* JO-YING AND MOU-T'ANG

154 *Shuo wên chieh tzŭ chu.* A dictionary based on that of Hsü Shên (*q.v.*). Preface 1808. 32 *c.* WB 1872.

TUNG YU

155 *Kuang-chou shu po.* Notes on various inscriptions, including some on bronzes. Preface 1157. 10 *c.* Reprint WB 1888 in collection *Hsing so-ts'ao t'ang chin shih ts'ung shu.*

VORETZSCH, E. A.

156 *Altchinesische Bronzen.* Pp. 335, pls. 169. Berlin: 1924.

WANG CH'ANG, *T.* TÊ-FU, *H.* SHU-AN

157 *Chin shih ts'ui pien.* A collection of inscriptions dating from earliest times to thirteenth century, with comments and quotations. Texts in archaic script and some sculpture designs are reproduced. 160 *c.* WB 1805. Small PHL 1893.

WANG CH'I, *T.* YÜAN-HAN

158 *Lei shu san ts'ai t'u hui.* An illustrated general encyclopaedia. Last dated preface 1609. 106 *c.* WB.

WANG CH'IU, *T.* TZŬ-PIEN, K'UEI-YÜ AND K'UEI-SHIH

159 *Hsiao t'ang chi ku lu.* Facsimiles of inscriptions on bronzes and seals dating from Han and earlier, with transcriptions. Postface 1176. 2 *c.* WB (printed in red), undated.

WANG FU, *T.* CHIANG-MING, AND OTHERS

160 *Hsüan-ho po-ku t'u lu.* An illustrated catalogue of more than 500 bronzes in the imperial collection. Compiled by an imperial commission, presided over by Wang Fu, on the lines of two earlier catalogues, now lost. Probably published about 1125. 30 *c.* Po ju chai edition, WB 1588, smaller than original. Reprints exist of the period 1308-1312, and many later.

WANG HOU-CHIH, *T.* SHUN-PO, *H.* FU-CHAI

161 *Sung Wang Fu-chai chung ting k'uan chih.* Reproductions of inked-squeezes from inscriptions on bronzes, with transcriptions and notes. Twelfth century. 40 ff. WB, edited by Juan Yüan.

WANG HSIANG

162 *Fu shih Yin ch'i lei tsuan.* Archaic forms from the Honan Finds arranged under the *Shuo wên* classifiers. Contexts quoted. 8 *c.* PHL 1921.

WANG JÊN-SHOU, *T.* CHING-SHAN

163 *Chin shih ta tzŭ tien.* A catalogue of ancient script arranged in the same order as the K'ang-hsi Dictionary. Examples mainly from inscriptions on bronze, stone, and pottery; provenance of each cited. 32 *c.* PHL 1926.

WANG KUO-WEI, *T.* CHING-AN AND PO-YÜ, *H.* KUAN-T'ANG AND YUNG-KUAN

164 *Archaeology in the Sung Dynasty.* Translated by C. H. Liu. Article in *China Jour.* (May), 1927, pp. 222-231.

165 *Chien shou t'ang so tsang Yin hsü wên tzŭ k'ao shih.* Studies of inscriptions on the Honan Finds. Ff. 75. Articles in **6**, Nos. 16 to 21.

166 *Ku li ch'i liao shuo.* On certain ancient ritual objects. Ff. 13. Reprinted in the miscellany *Hsüeh t'ang ts'ung k'o,* undated.

167 *Kuan-t'ang chi lin.* 24 *c.* A section mainly archaeological, of the first series of the author's collected writings entitled *Hai-ning Wang Chung-ch'io Kung i-shu ch'u chi.* PHL 1927.

168 *Kuan-t'ang ku chin wen k'ao shih.* Notes on the inscriptions of five famous bronzes. Ff. 44, in same collection as **167**.

169 *Kuo ch'ao chin wên chu lu piao.* A tabulated list of inscriptions on bronzes studied under the Manchu dynasty with the writer's comments. 6 *c.* In miscellany *Hsüeh t'ang ts'ung k'o,* undated.

170 *Liang Chou chih shih wên yün tu.* A study of rhymes in inscriptions on 37 bronzes and the Stone Drums. Ff. 14, 1917, in same collection as **167**.

171 *Sung tai chin wên chu lu piao.* A list like **169**, but concerning writings of Sung epigraphists. Ff. 40, 1914. Reprinted as **169**.

WANG LI-MING, *H.* HSI-T'ING

172 *Chung ting tzŭ yüan.* A catalogue of archaic forms on bronzes, arranged according to rhymes. Provenance of each noted. 5 *c.* WB 1716.

WATTERS, T.

173 *Essays on the Chinese Language.* Pp. 511. Shanghai: 1889.

WÊNG FANG-KANG, *T.* CHÊNG-SAN, *H.* T'AN-CH'I

174 *Liang Han chin shih chi.* A treatise on Han inscriptions, including historical and bibliographical data. 22 *c.* WB 1789.

WIEGER, L.

175 *Chinese characters.* Trans. by L. Davrout. Based mainly on **37**. 2 vols. Ho-chien Fu: 1915.

WU JUNG-KUANG, *T.* PO-JUNG, *H.* HO-WU

176 *Yün ch'ing kuan chin shih lu.* Facsimiles of inscriptions, mostly on bronzes, from earliest times to the Han, and on several T'ang tallies. Transcriptions and notes. 5 *c.* WB 1842.

WU SHIH-FÊN, *T.* TZŬ-PI, *H.* SUNG-SUN

177 *Chün ku lu chin wên.* Facsimiles of inscriptions on bronzes ascribed to Three Dynasties, arranged according to number of characters in each, from 1 to 497. Each transcribed, and comments by other writers often quoted. 3 *c.*, each in 3 parts. WB 1896.

WU TA-CH'ÊNG, *T.* CH'ING-CH'ING, *H.* HÊNG-HSIEN AND K'O-CHAI

178 *Hêng-hsien so chien chi chin lu.* Pictures of ancient inscribed bronzes, with facsimiles of inscriptions which are transcribed. Ff. 134 in 4 *pên* Blocks cut in 1874. WB printed 1919. First edition, 1885.

179 *K'o-chai chi ku lu.* Reproductions of inked-squeezes from inscriptions on bronzes. Transcriptions and notes. Author's preface, 1896. 26 *ts'ê*, supplemented with rough draft of notes (*shih wên shêng kao*) by the author, 2 *ts'ê*. PHL 1921. First edition, without supplement, 1918.

180 *Shuo wên ku chou pu.* A catalogue of archaic script supplementary to the *Shuo wên*. Provenance of each example noted, and sometimes comments added. WB 1898 of the second and enlarged edition, finished 1895. First edition, 1883.

181 *Tzŭ shuo.* Thirty-two studies of separate characters. Ff. 40. PHL, undated.

WU YÜN, *T.* P'ING-CHAI, *H.* T'AI-LOU AND YÜ-T'ING

182 *Êrh pai lan t'ing chai shuo tsang chin shih chi.* Annotated pictures of inscribed bronzes with facsimiles of inscriptions; coin moulds; and five examples of calligraphy of Sui and T'ang dynasties represented in outline. 4 *ts'ê*. PHL, undated, of MS. copy. WB 1856.

183 *Liang lei hsien i ch'i t'u shih.* Pictures of inscribed bronzes and moulds from earliest times to tenth century, with facsimiles of inscriptions and comments. Many in **182** included. 12 *c.* WB 1873.

YANG FU, *T.* MAO-TS'AI, *H.* HSIN-CHAI

184 *I li p'ang t'ung t'u.* Supplement to **185**. Plans of temples, and notes on sacrificial animals and vessels. Ff. 37.

185 *I li t'u.* A commentary on the *I li*, with diagrams, based on written sources. Preface 1228. 17 *c.* Japanese WB 1799.

YEN KAI, *T.* KÊN-FU

186 *Chin shih wên tzŭ.* Reproductions of inked-squeezes from various inscribed objects. Most of the squeezes are from the collection of Chang T'ing-chi, whose notes accompany them. 2 *pên*, PHL 1902.

YETTS, W. P.

187 *Chinese Bronzes.* Pp. 23, pls. 15. Reprint (with additions) of article in *Burlington Magazine Monograph: Chinese Art.* London: 1925.

YÜ LI, *T.* SHAN-P'I

188 *Ting lu.* Brief historical notes on famous cauldrons (*ting*). Author lived in sixth century. Ff. 9. WB reprint 1792 in miscellany *Han Wei ts'ung shu.*

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著者姓名不錄者凡七

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3 西清續鑑

4 西清古鑑

5 續考古圖

6 藝術叢編

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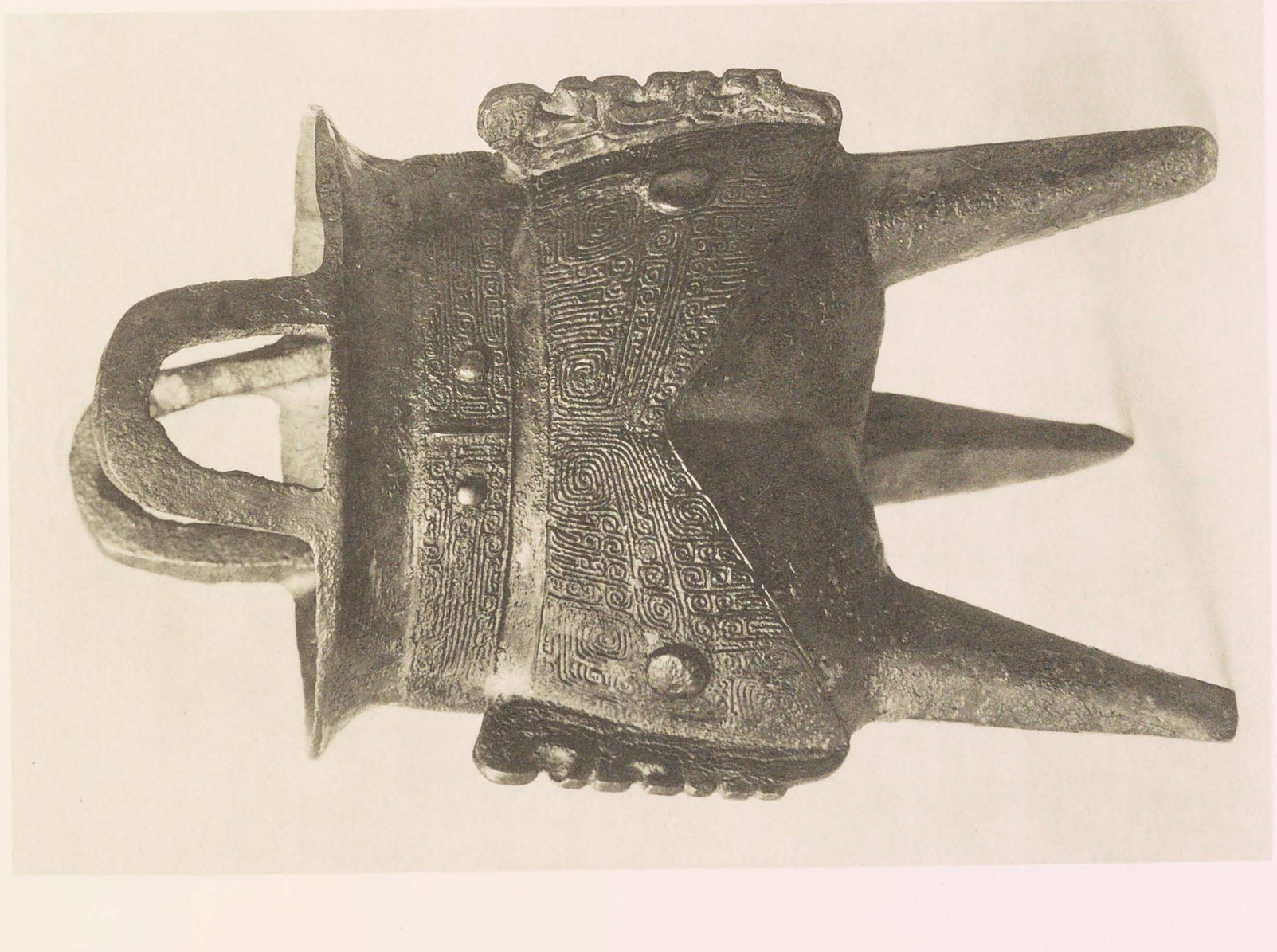
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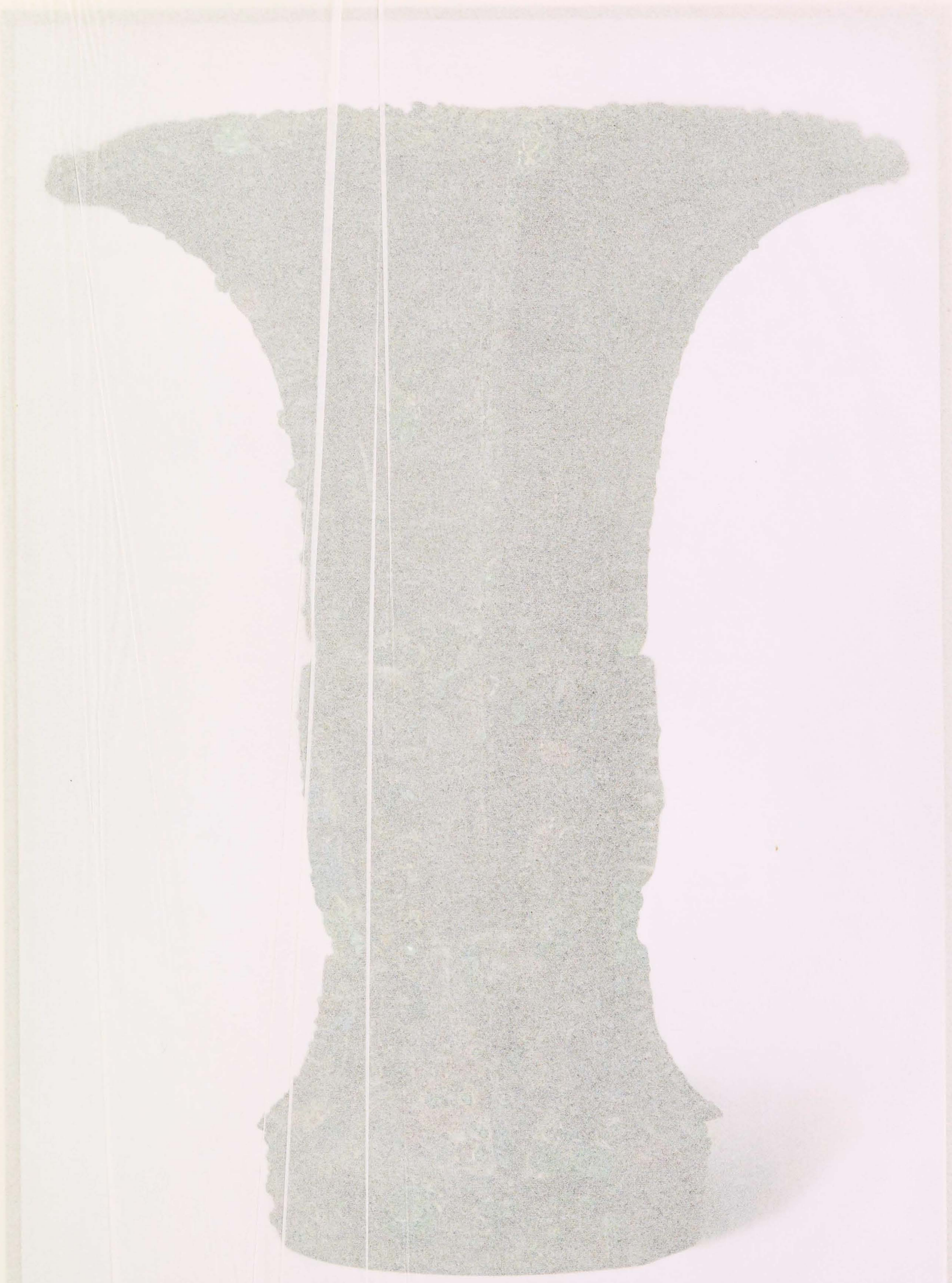
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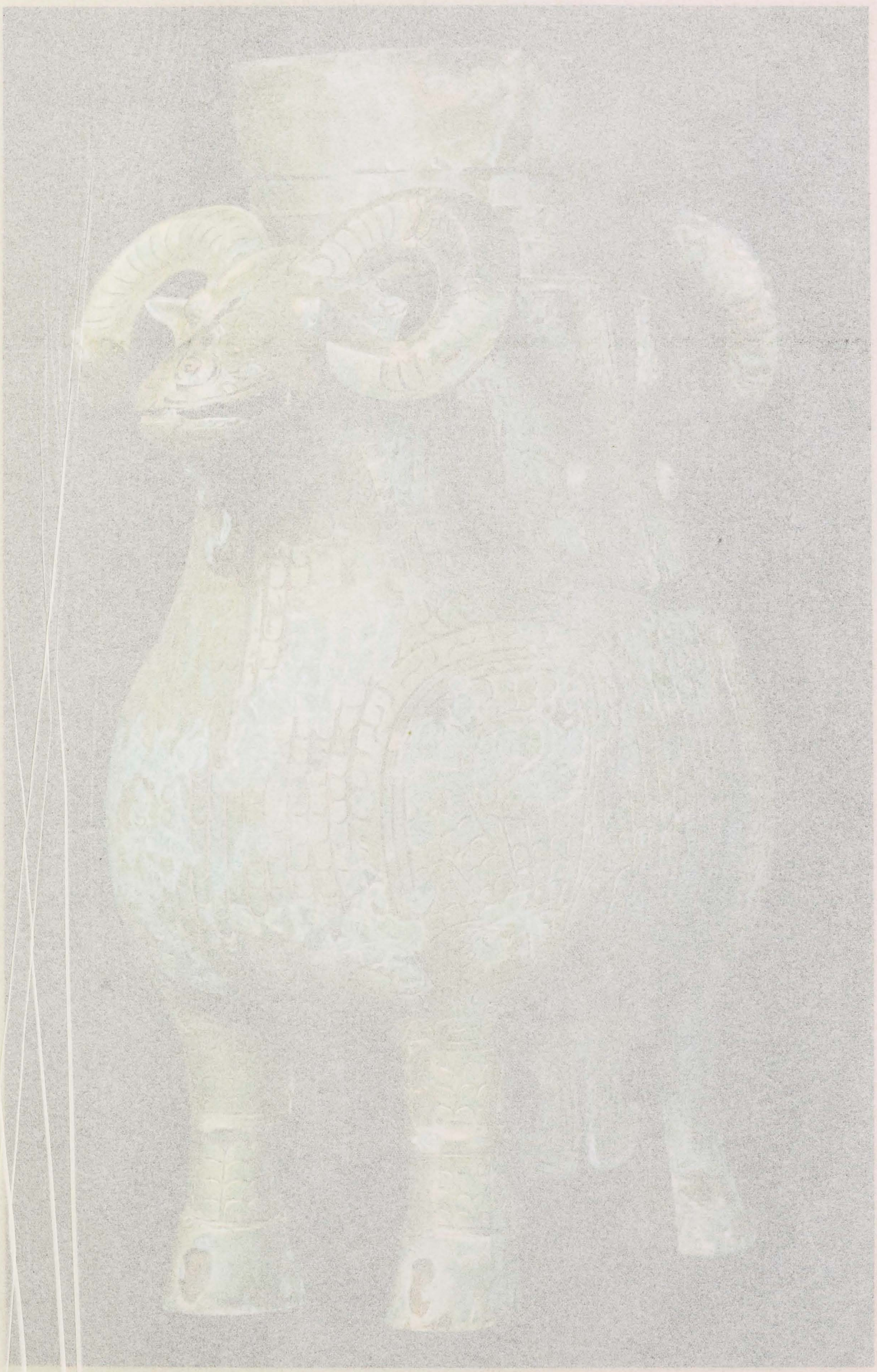
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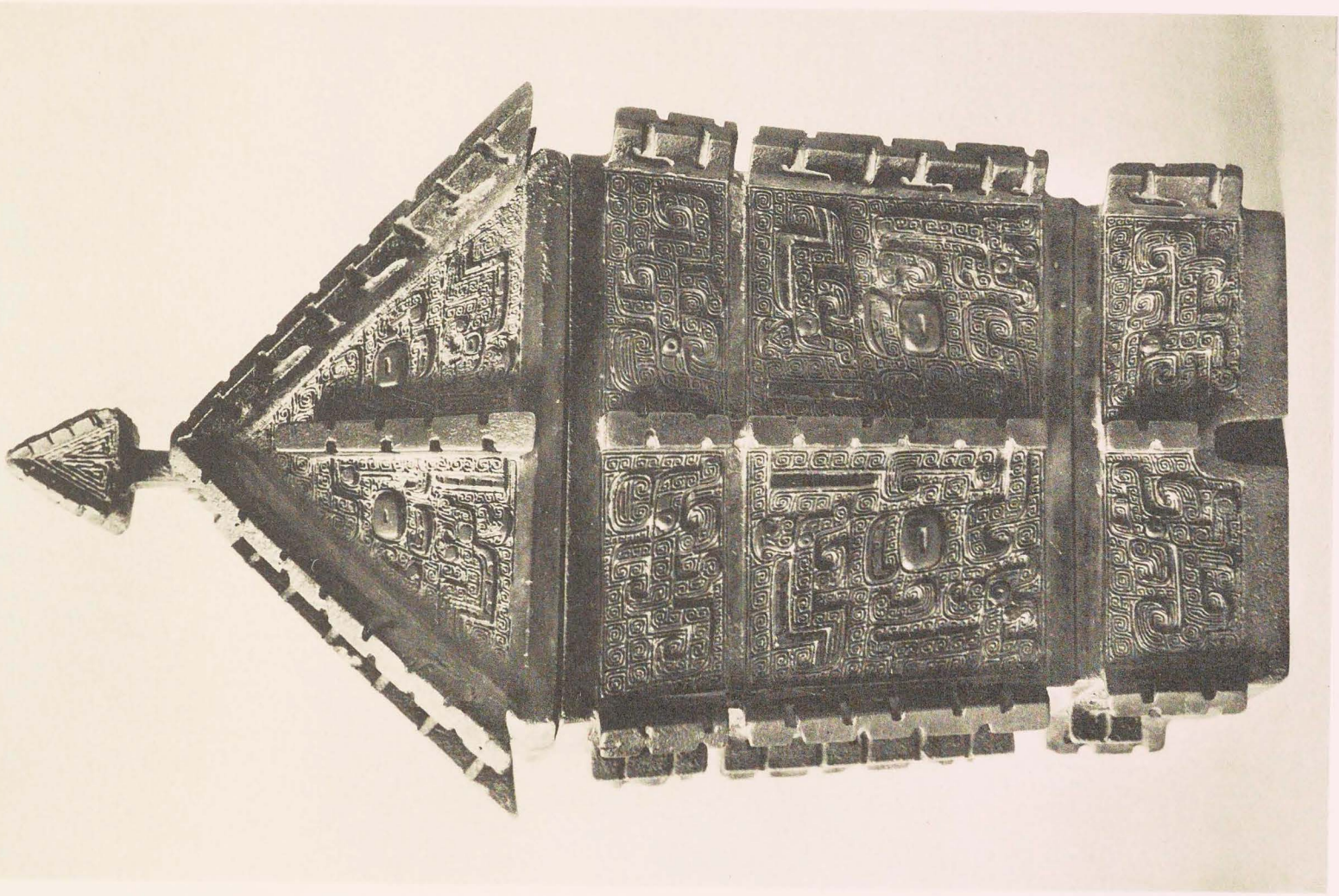


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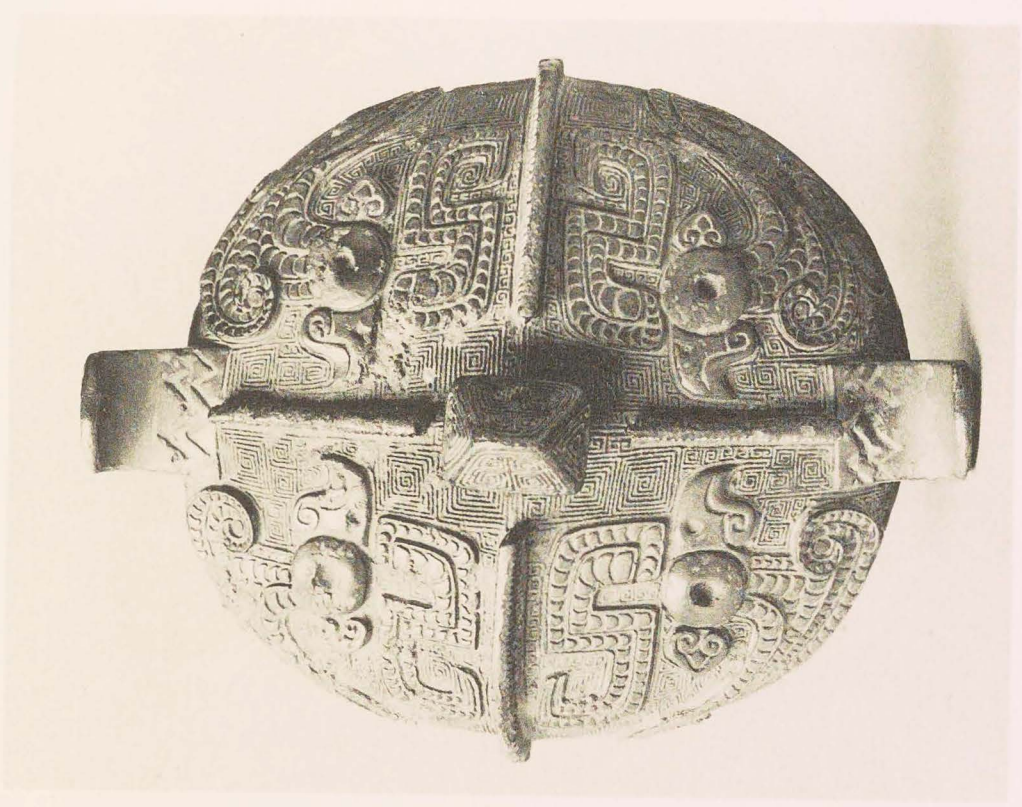


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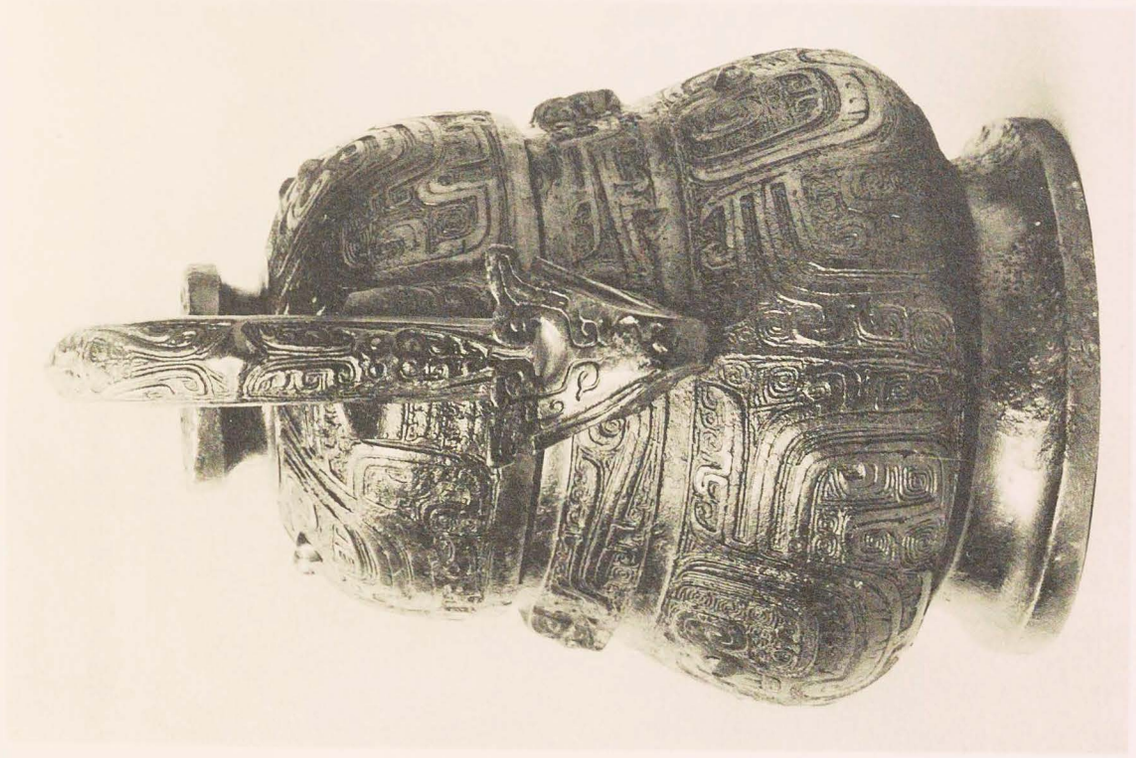




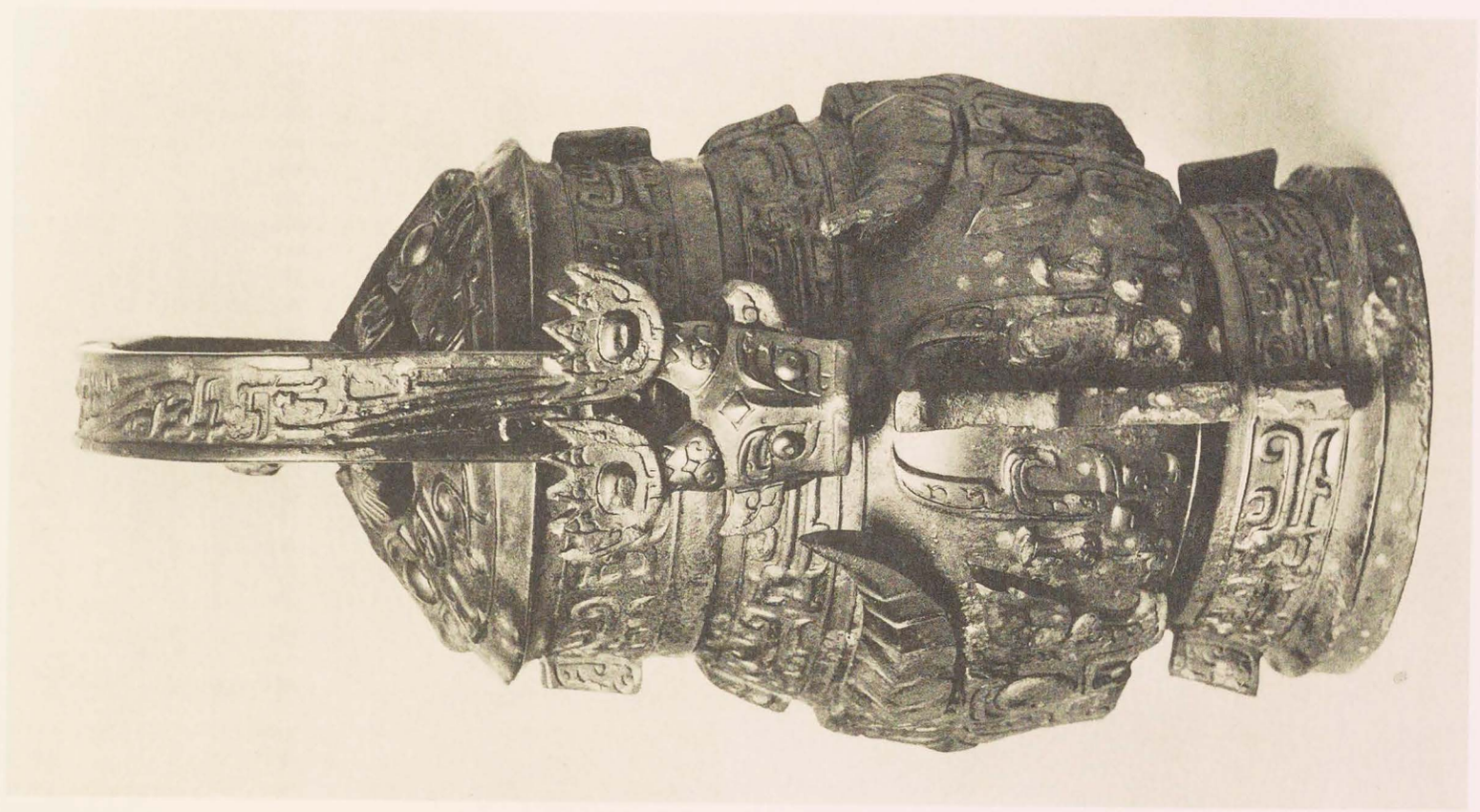








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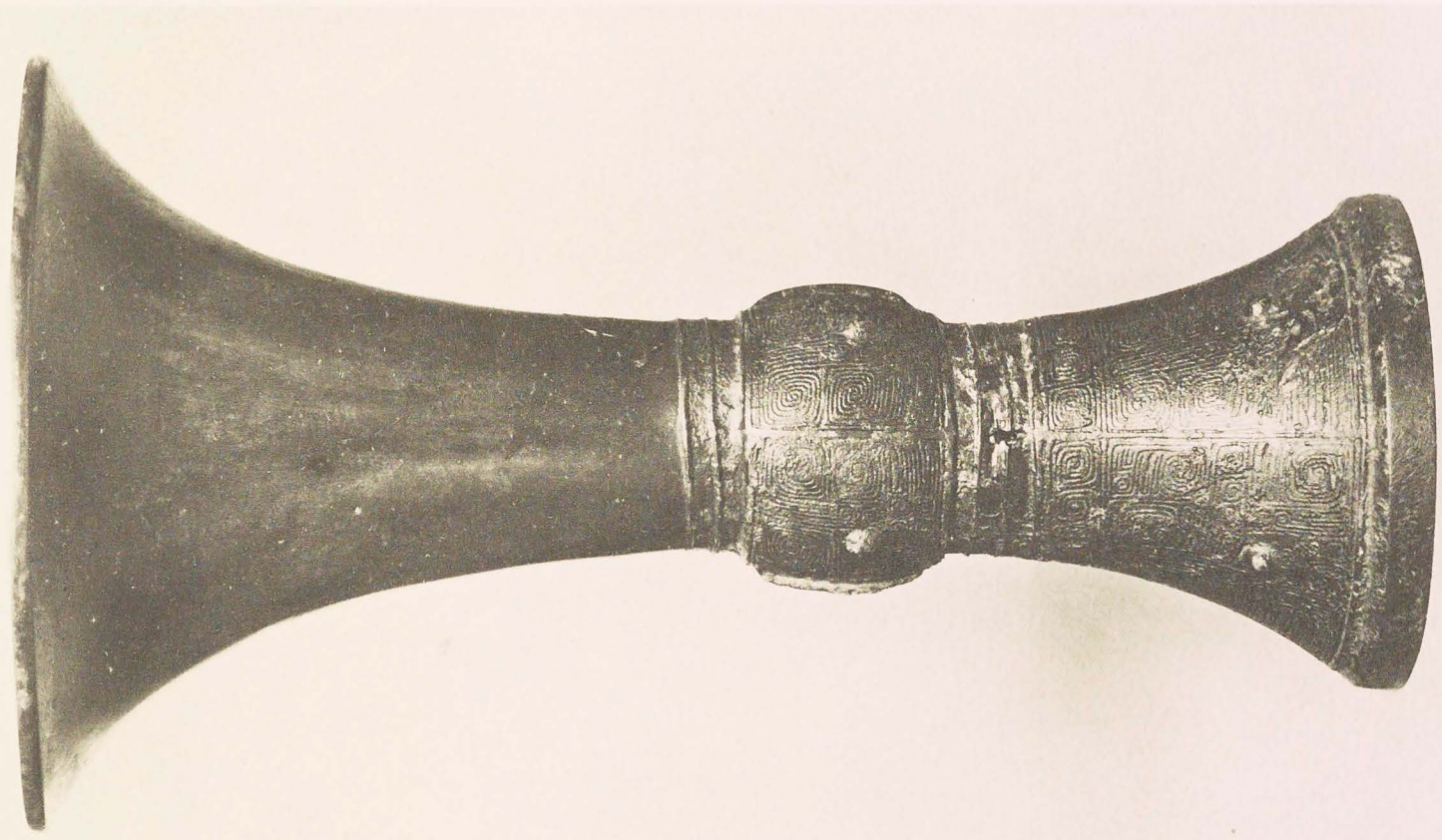








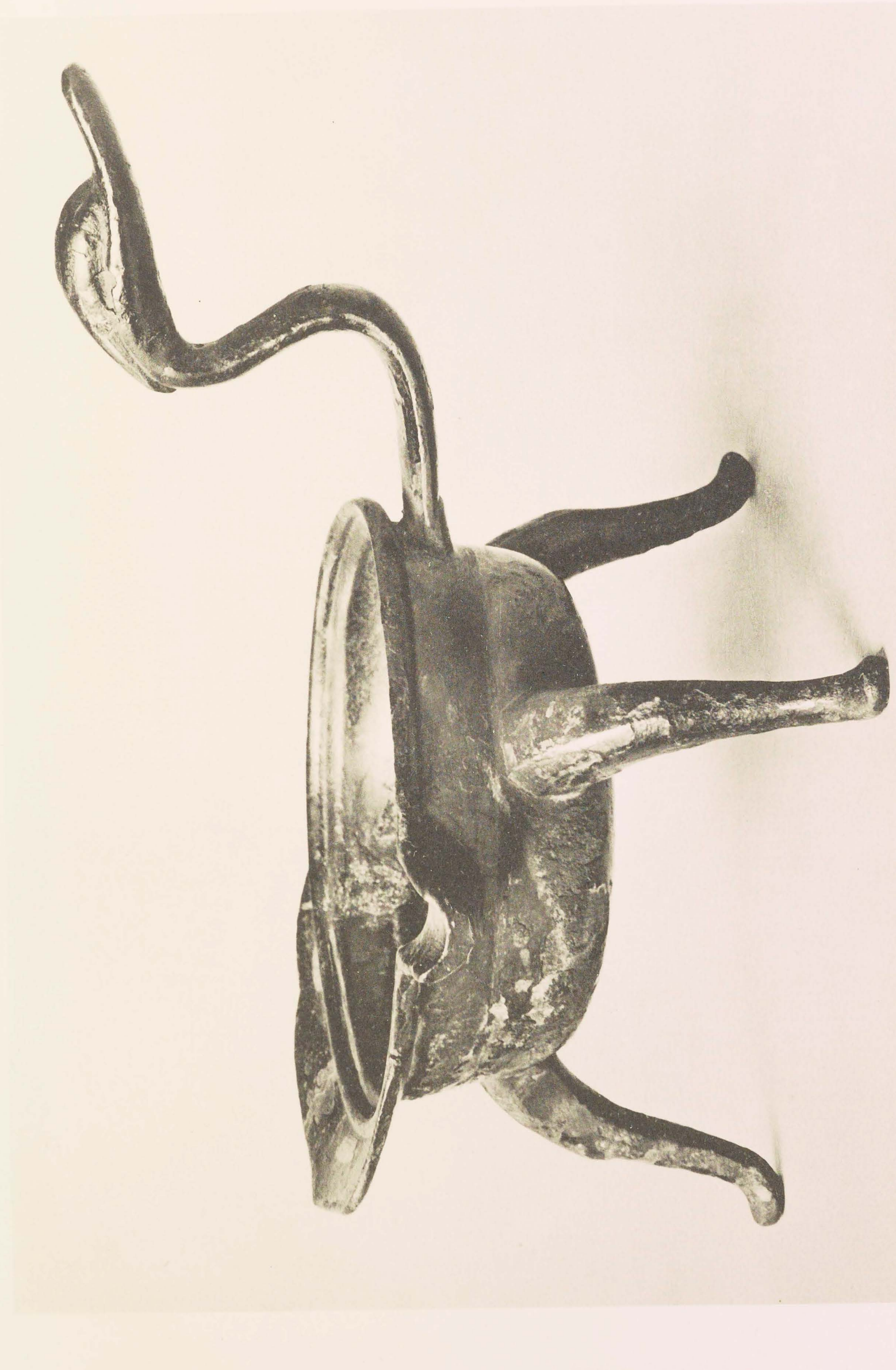
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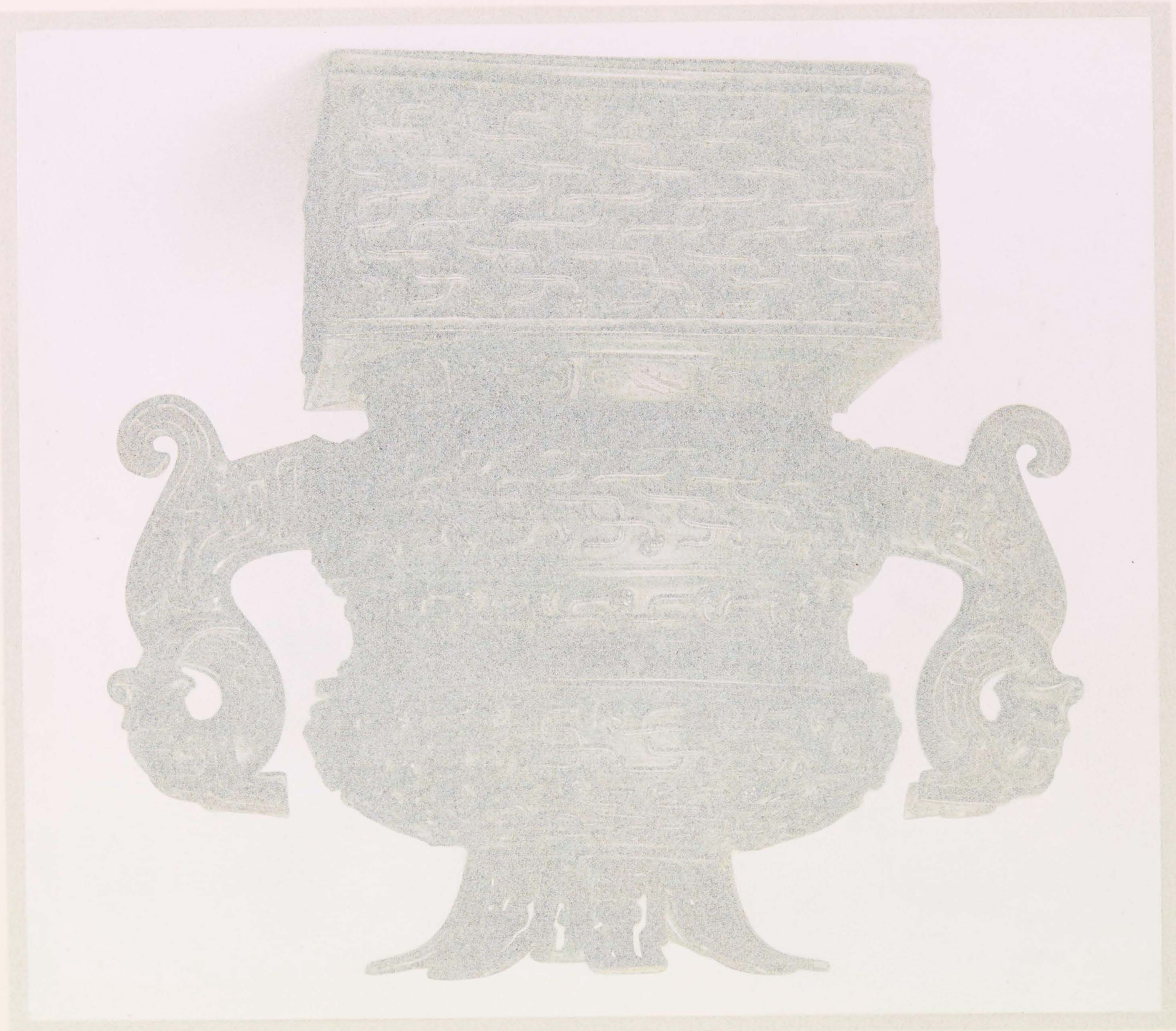


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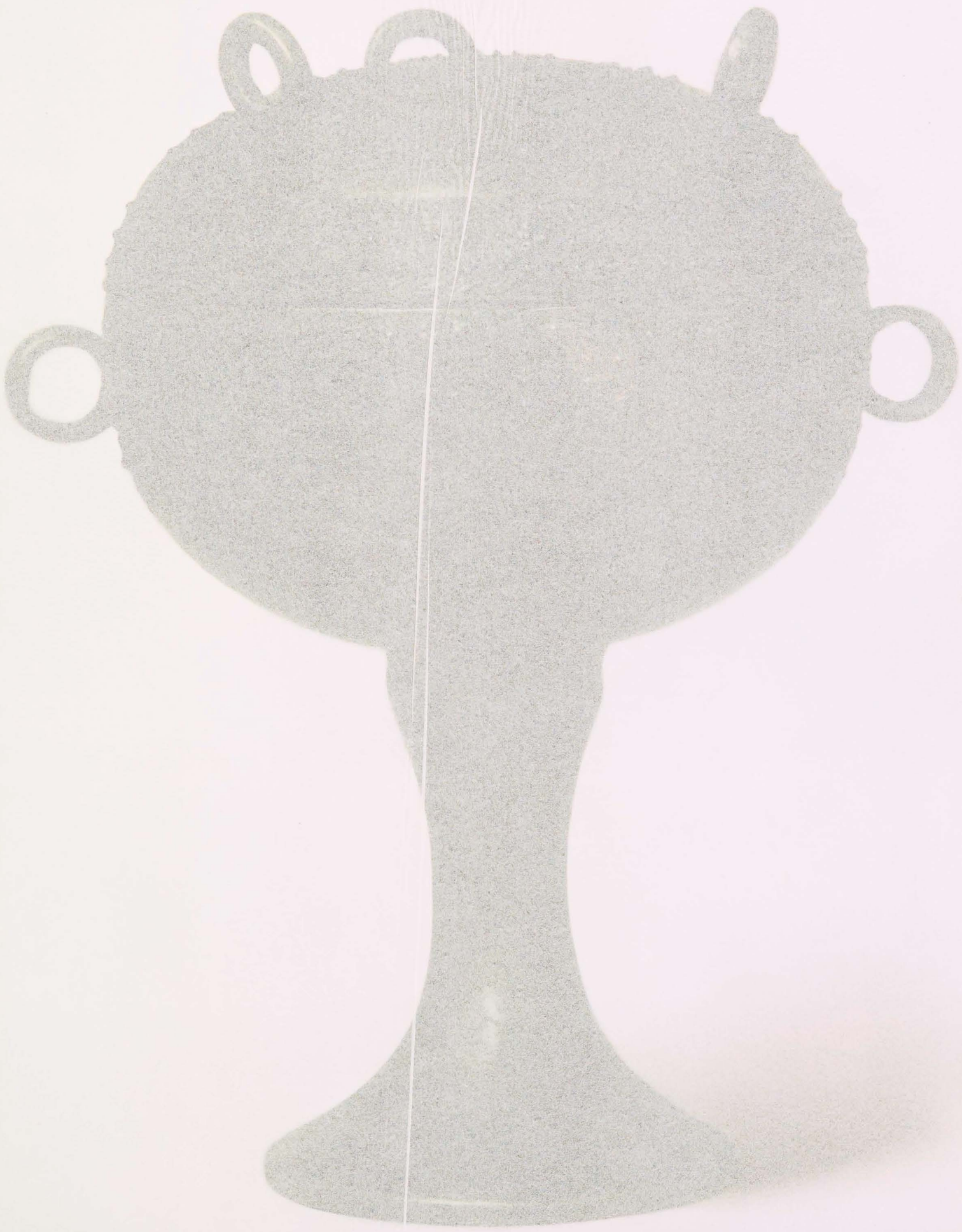




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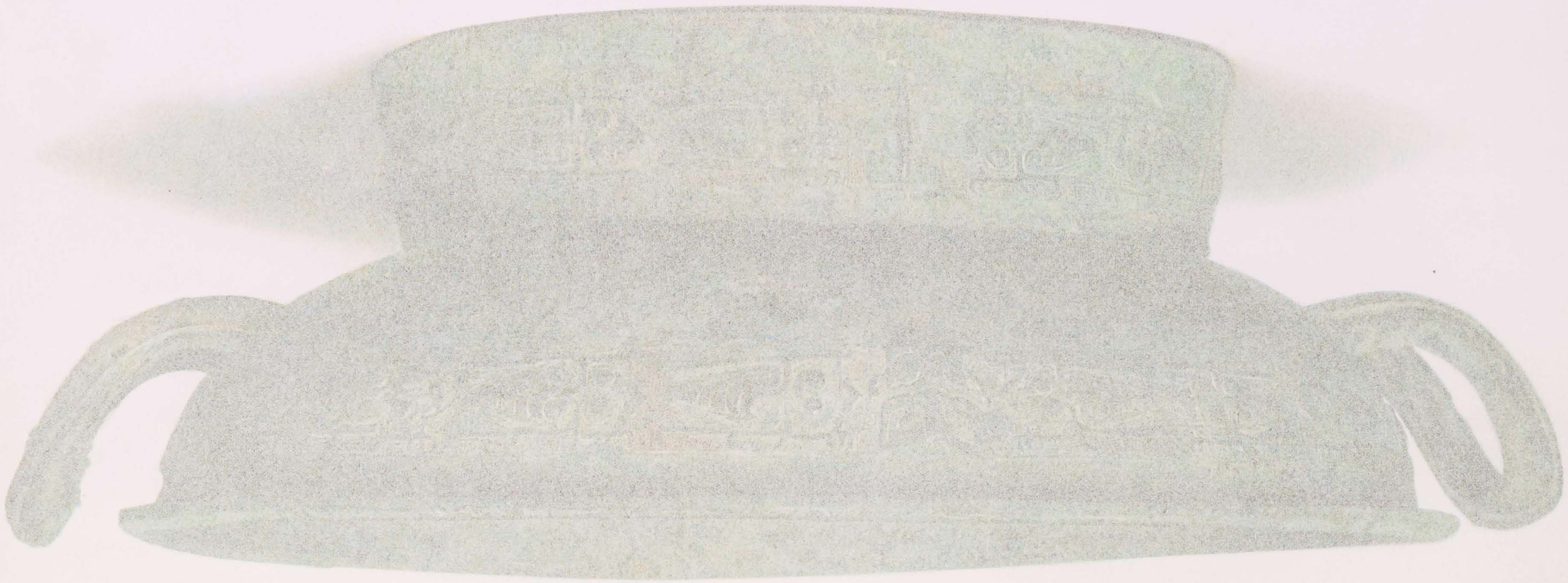




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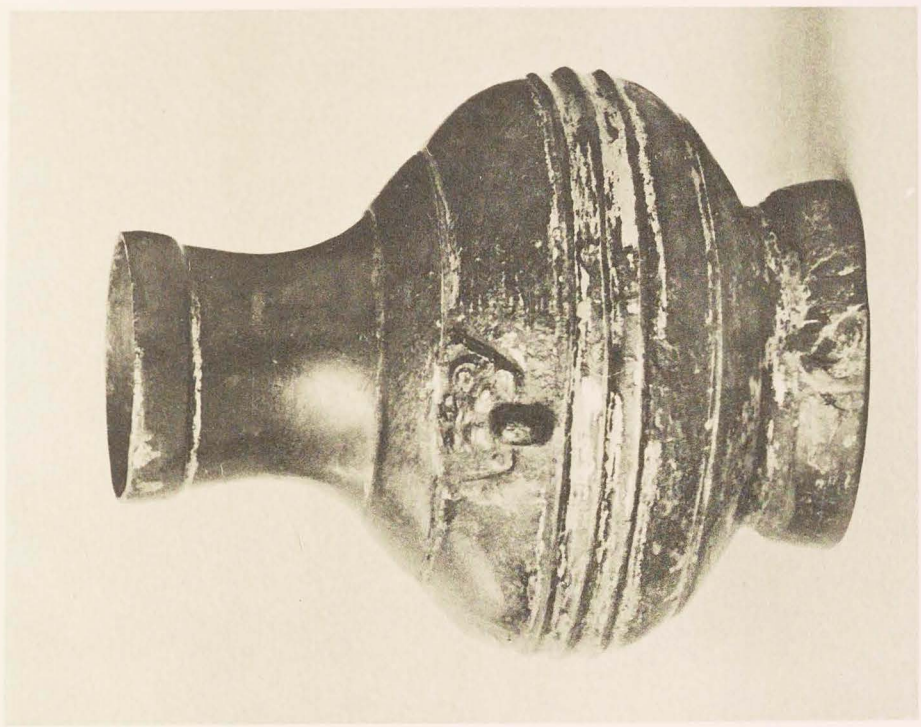


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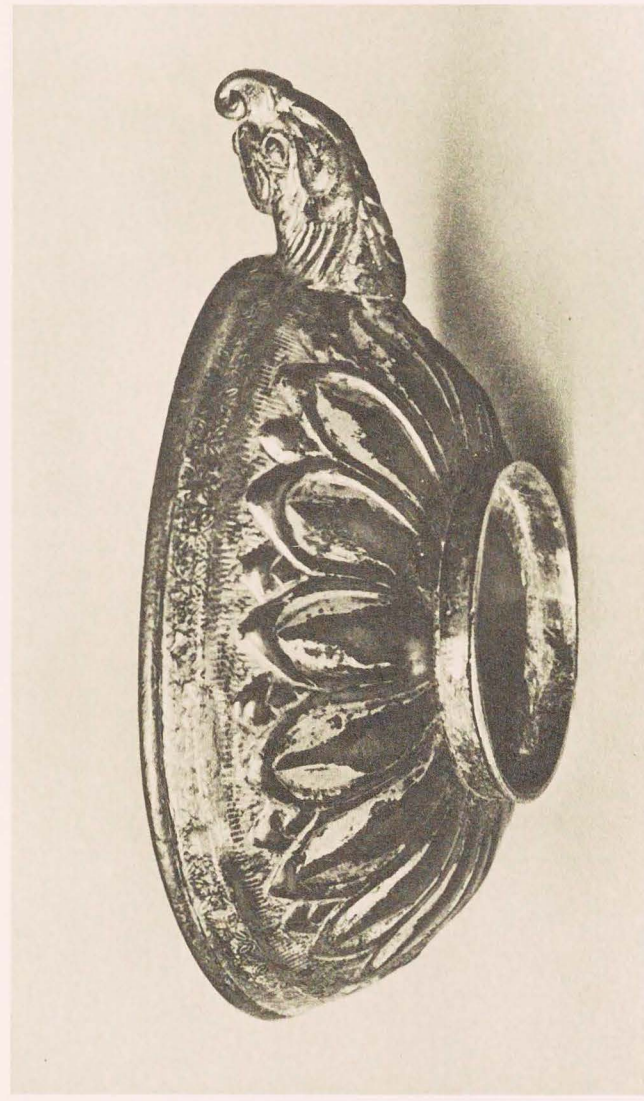




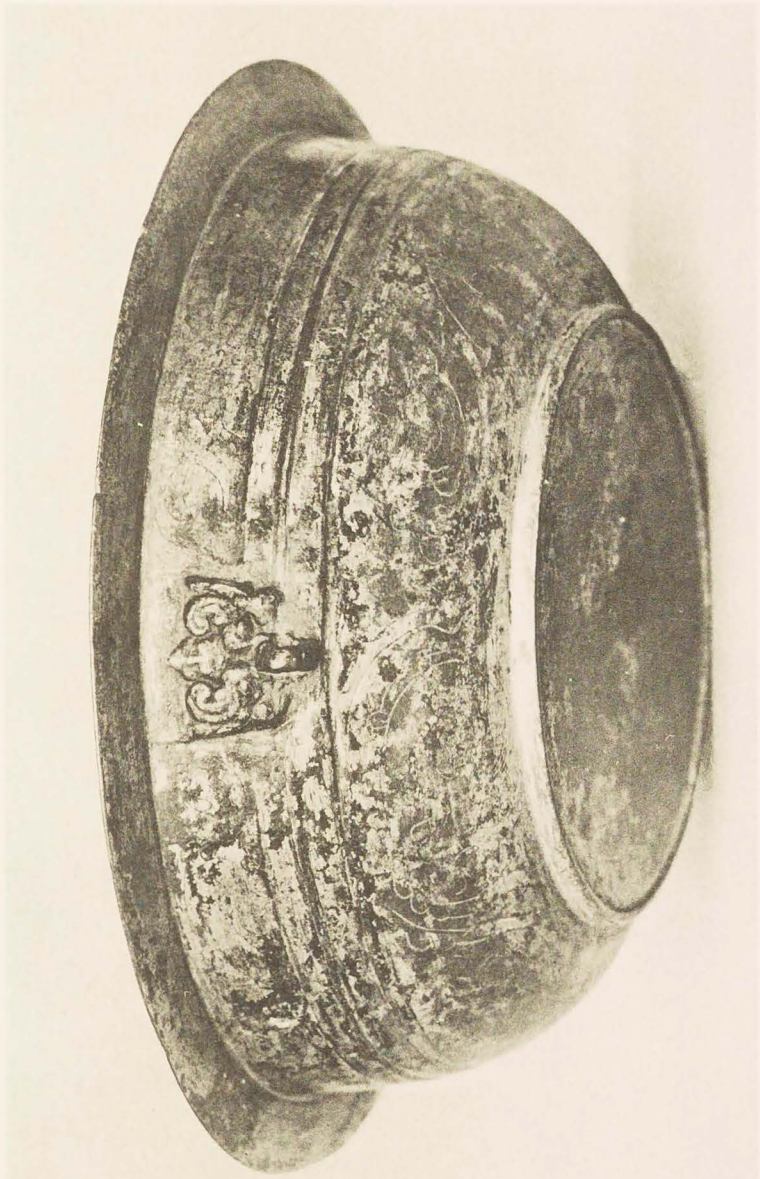




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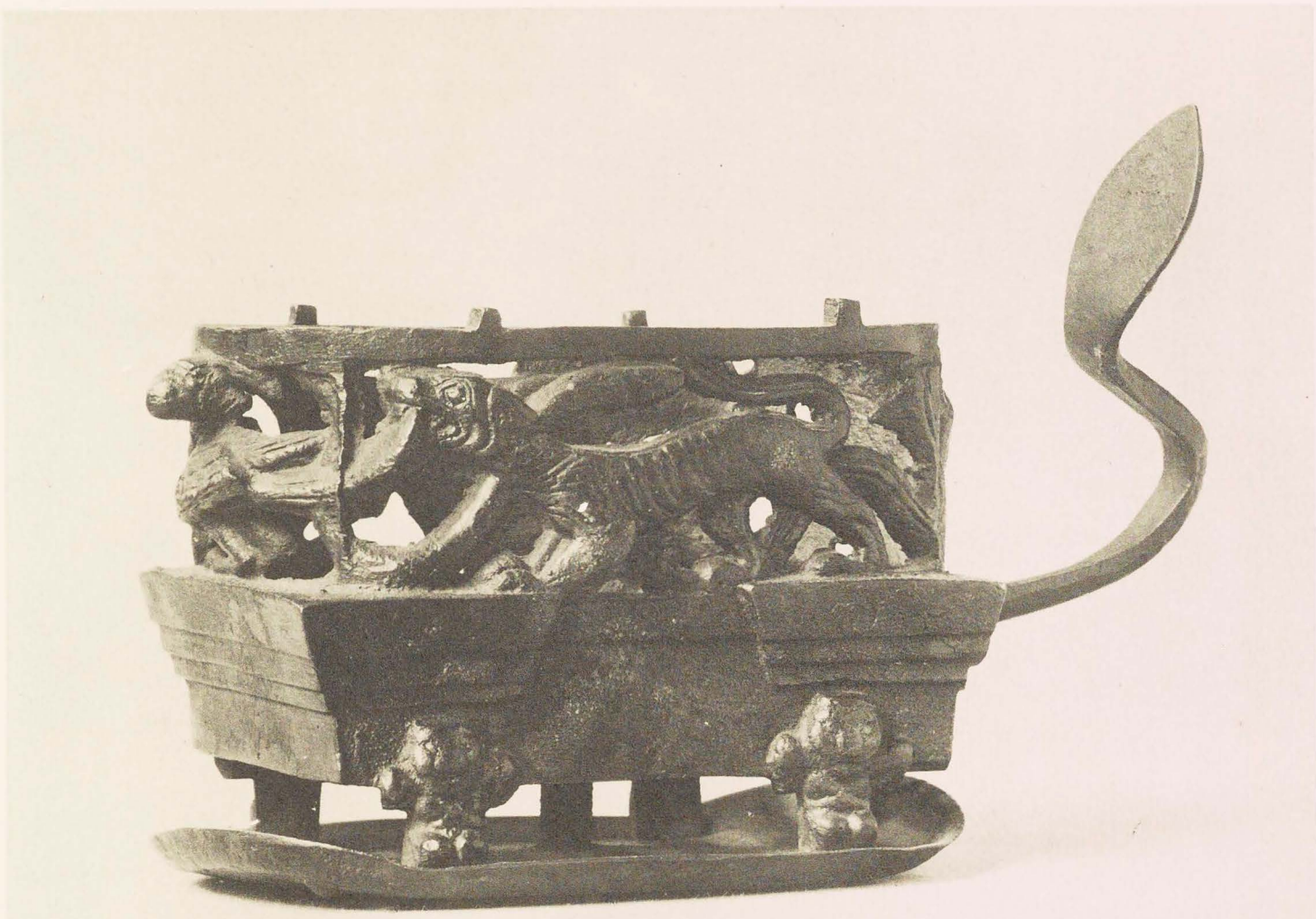




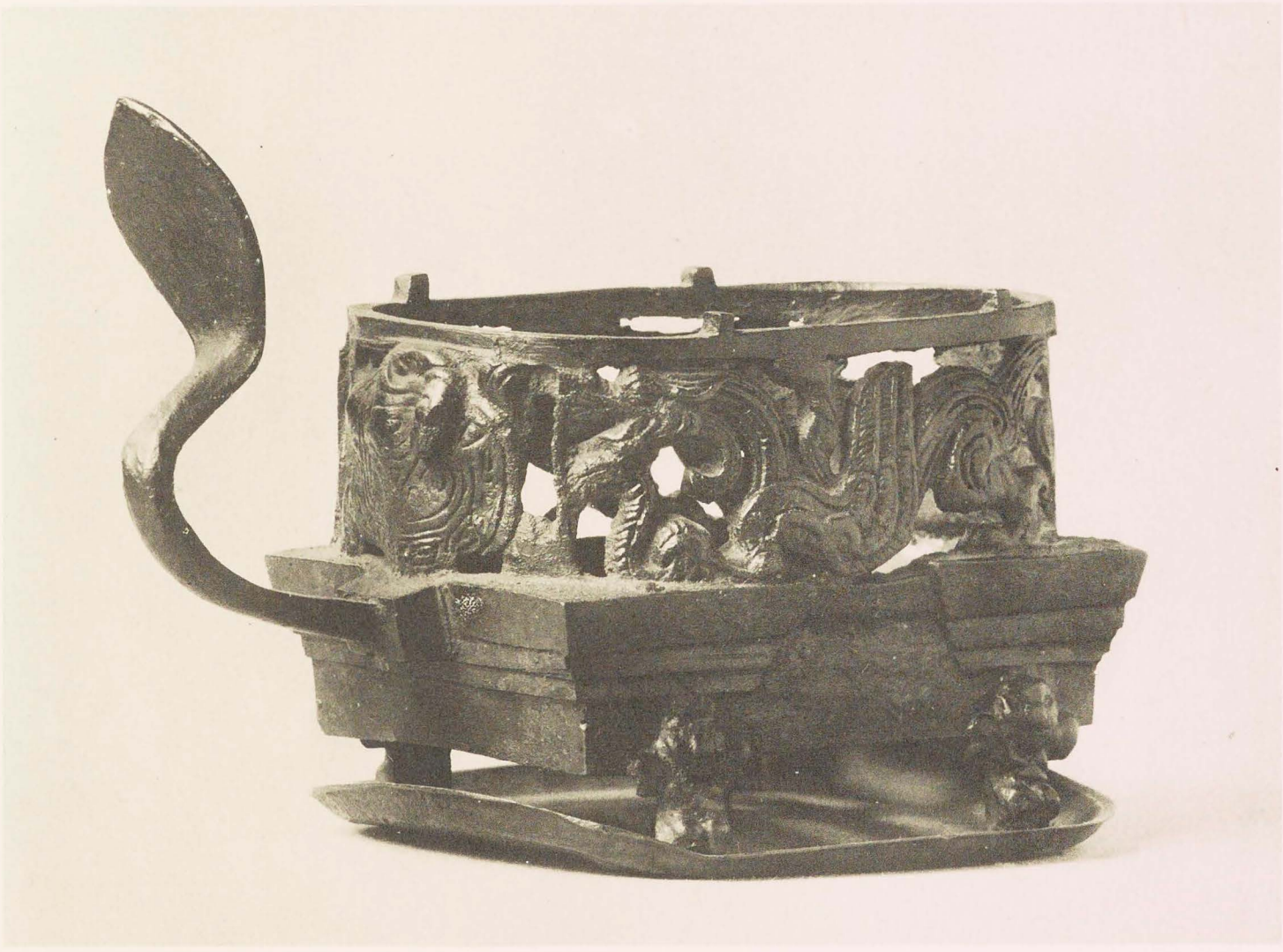








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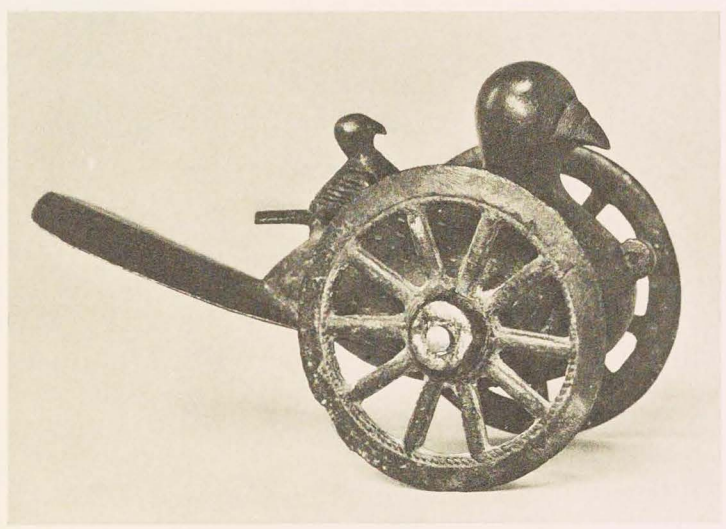
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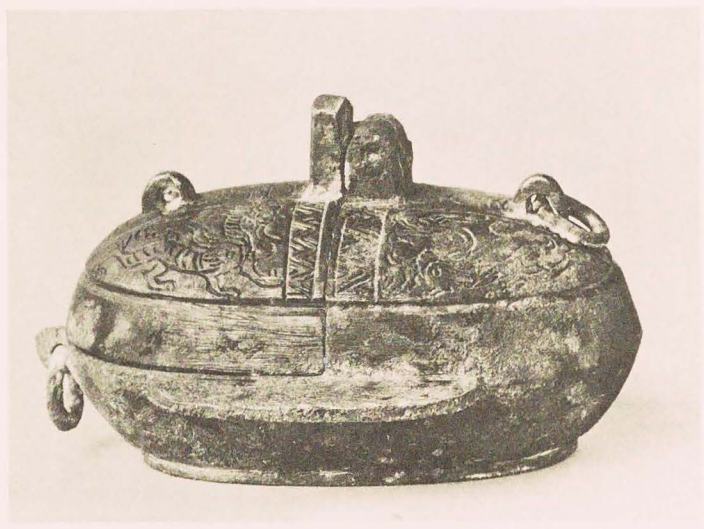
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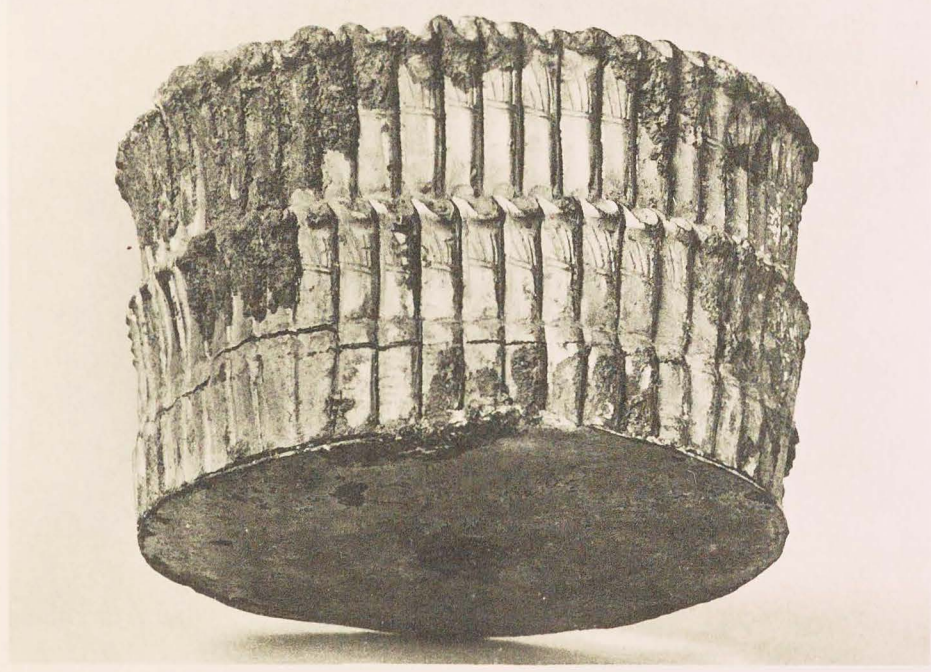
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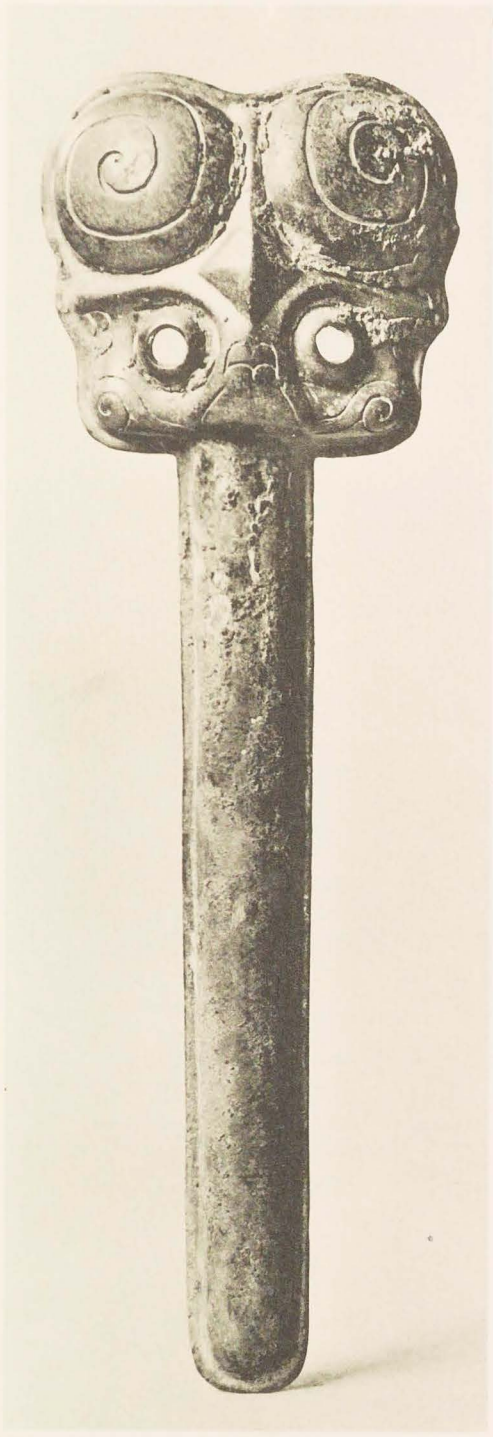
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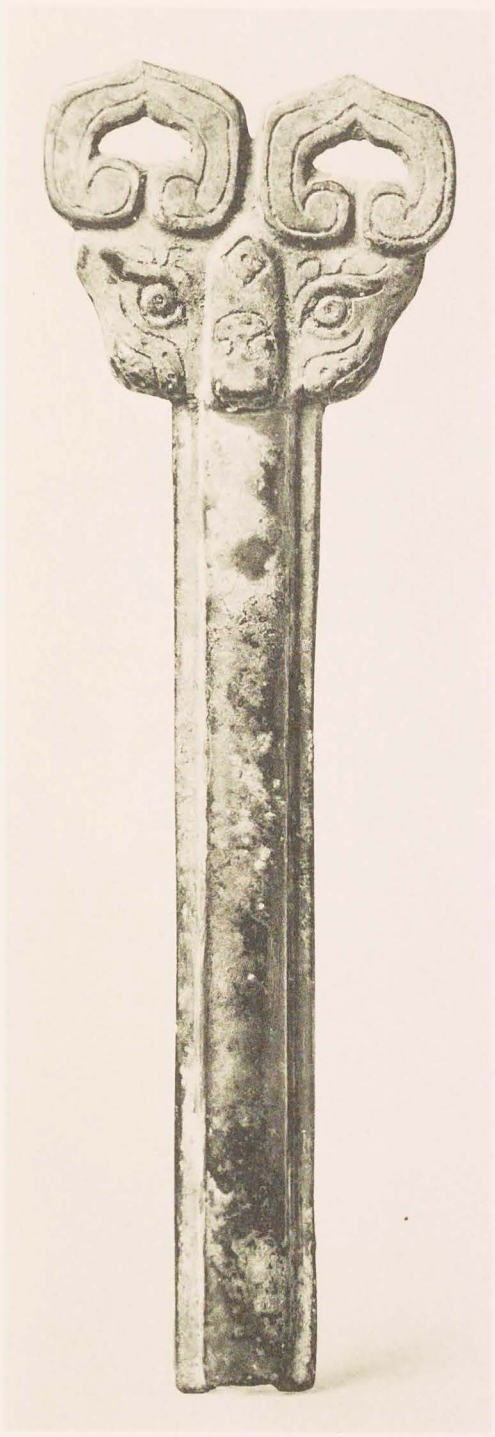
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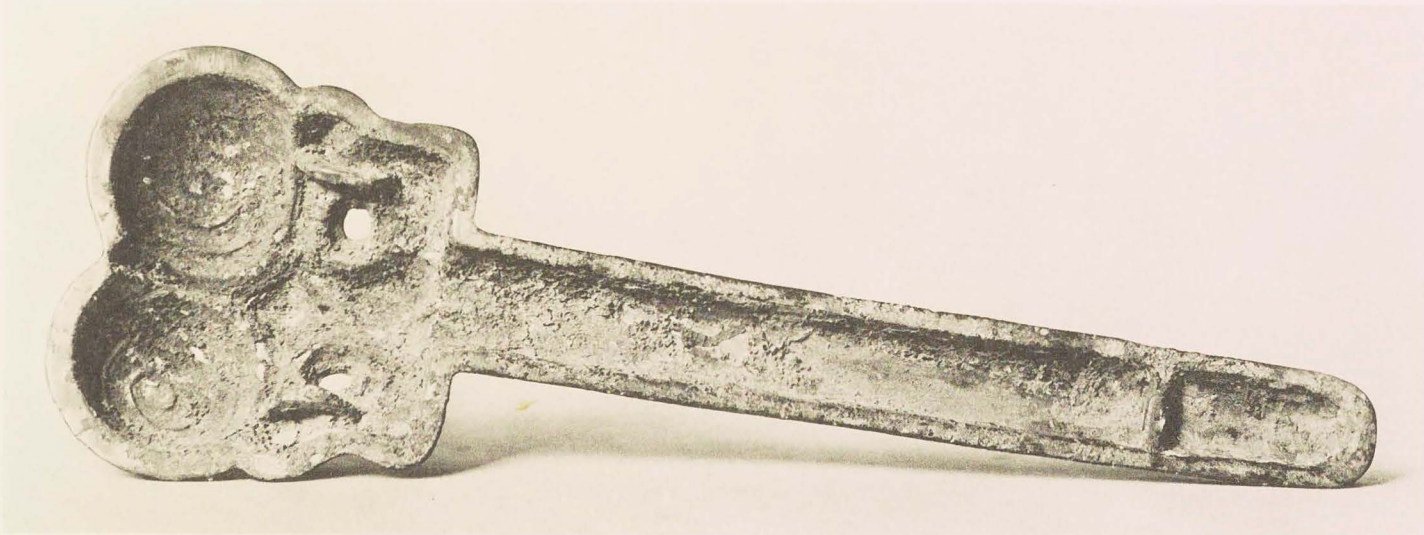
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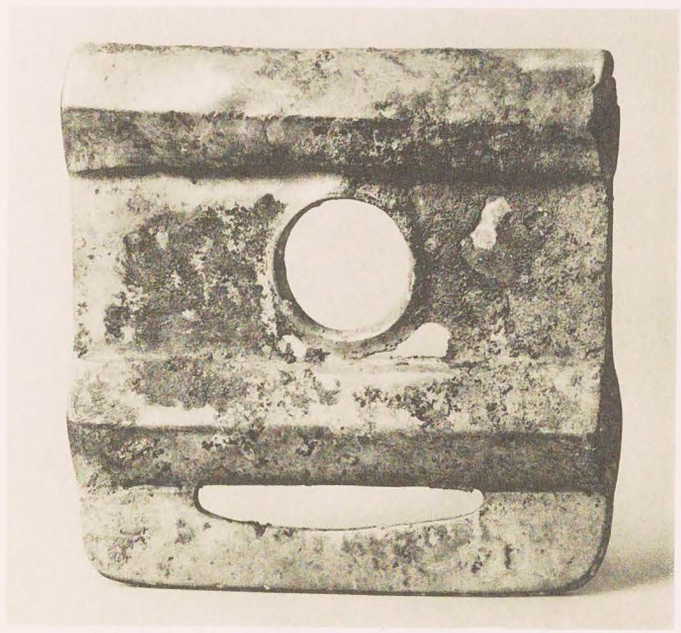
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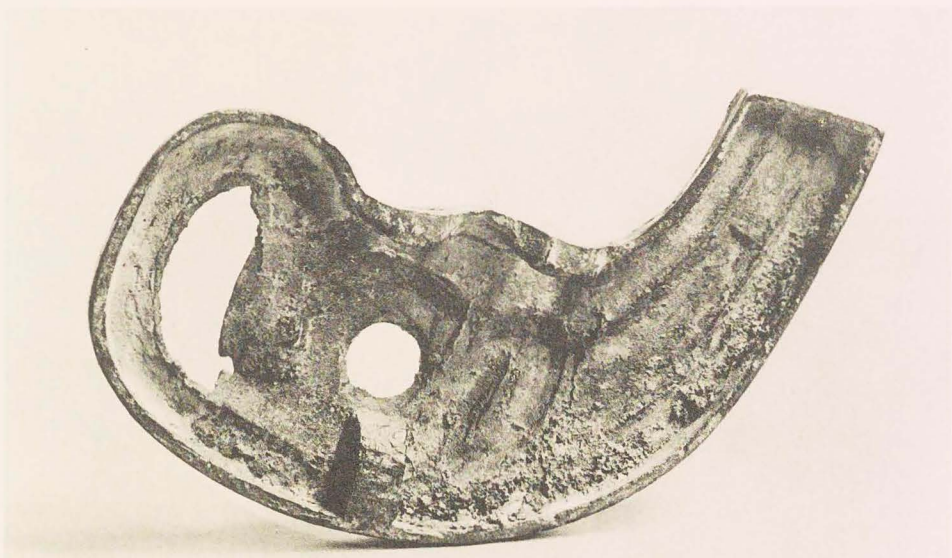
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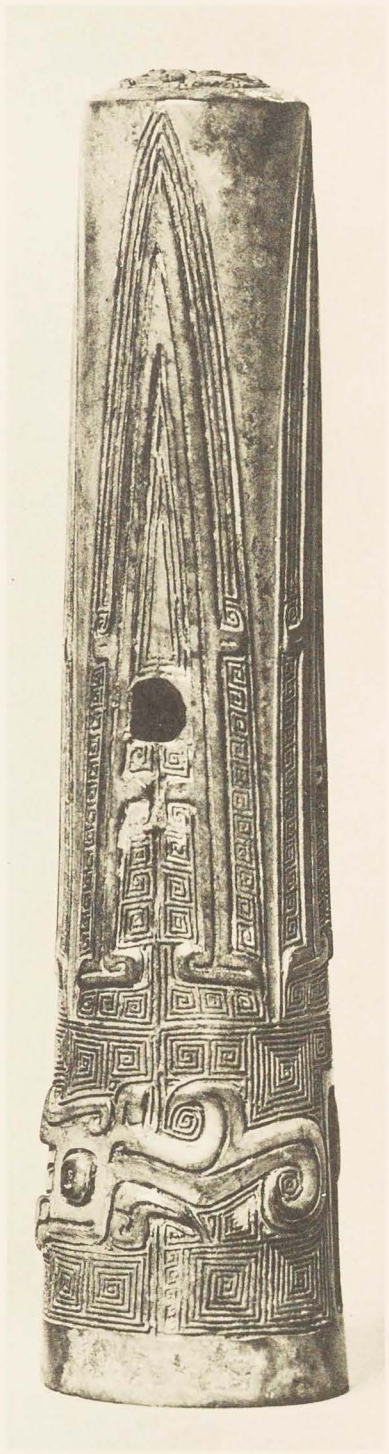
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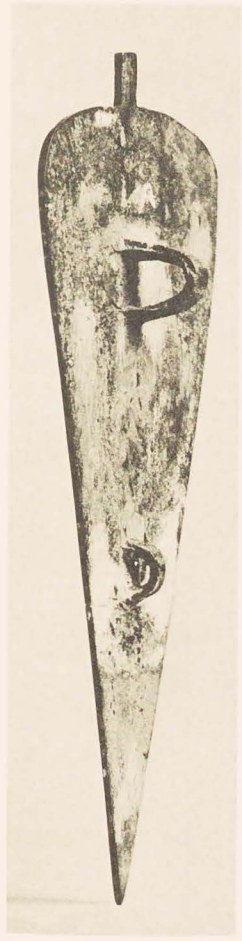
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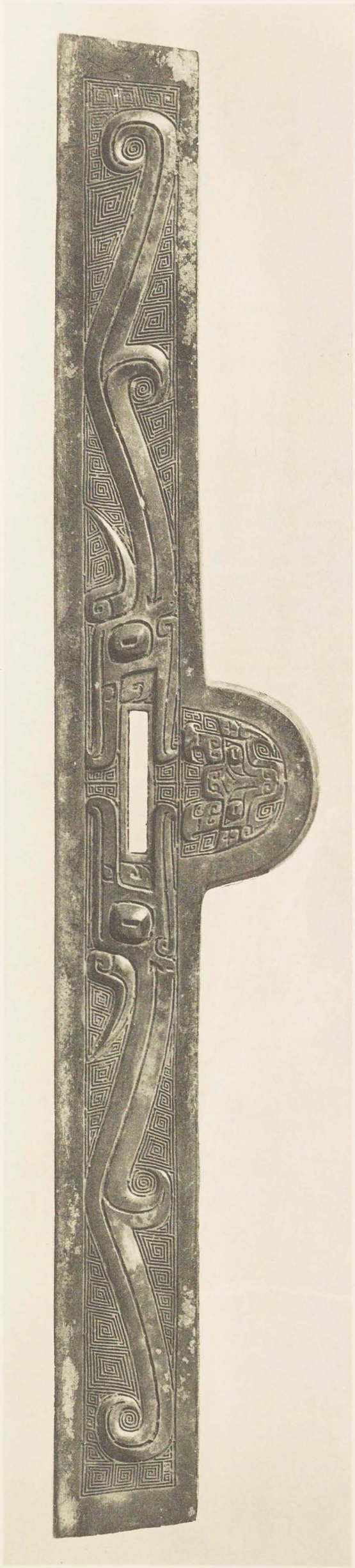
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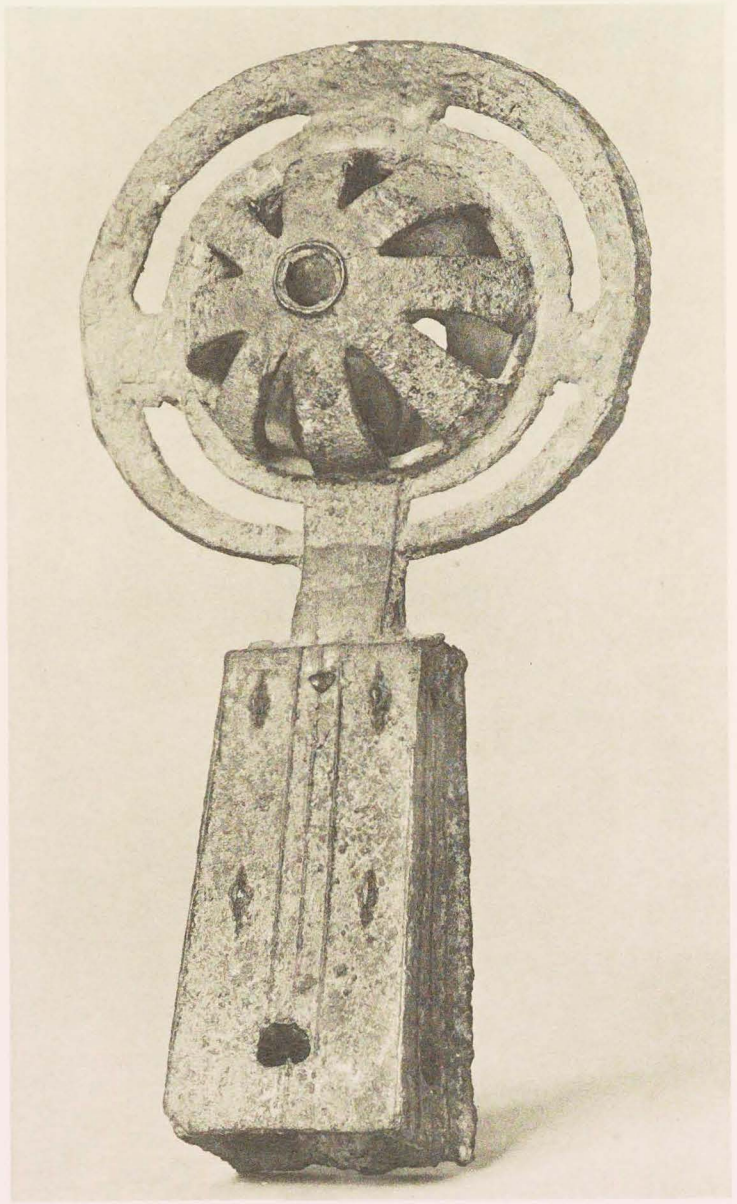
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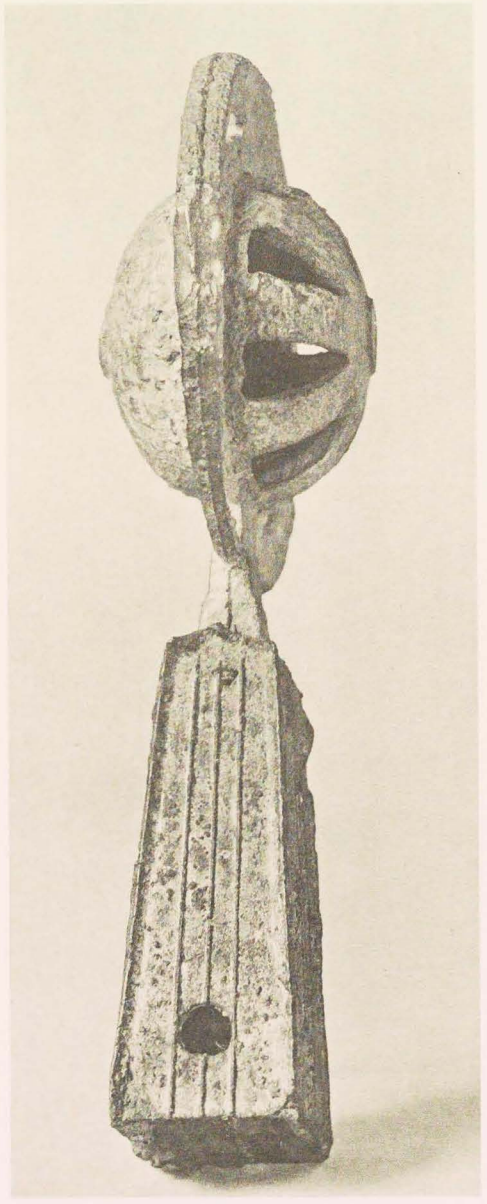
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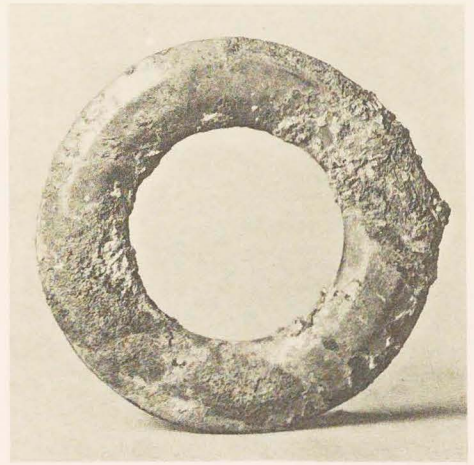
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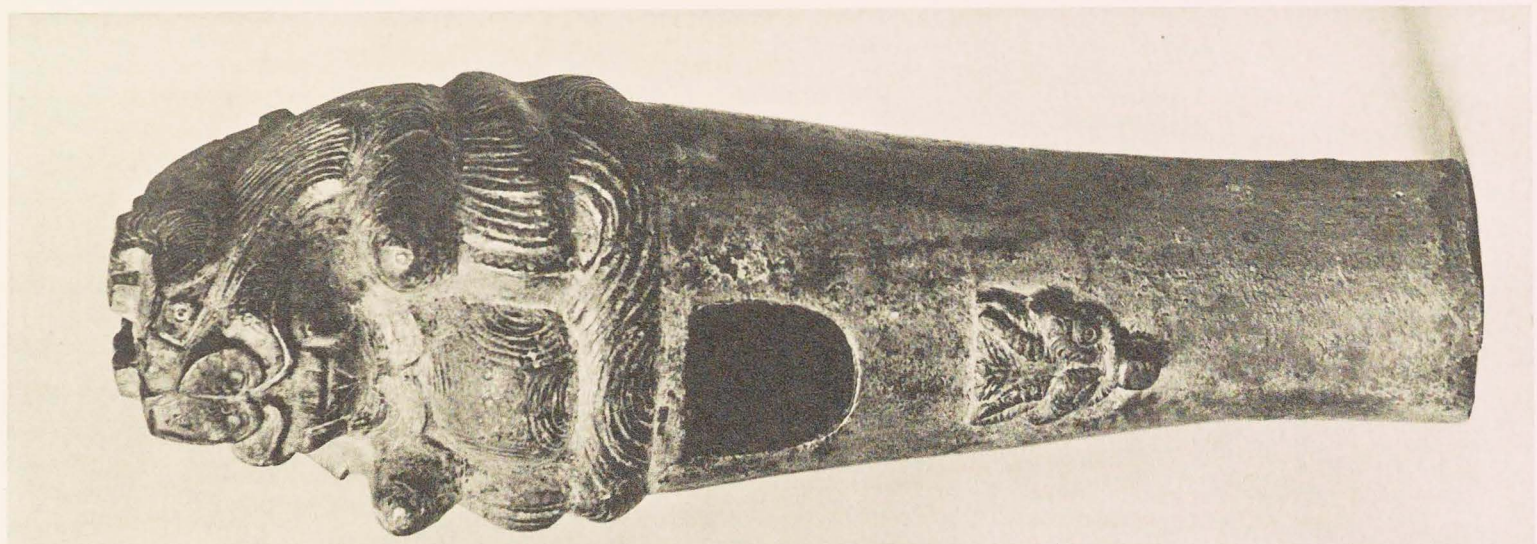


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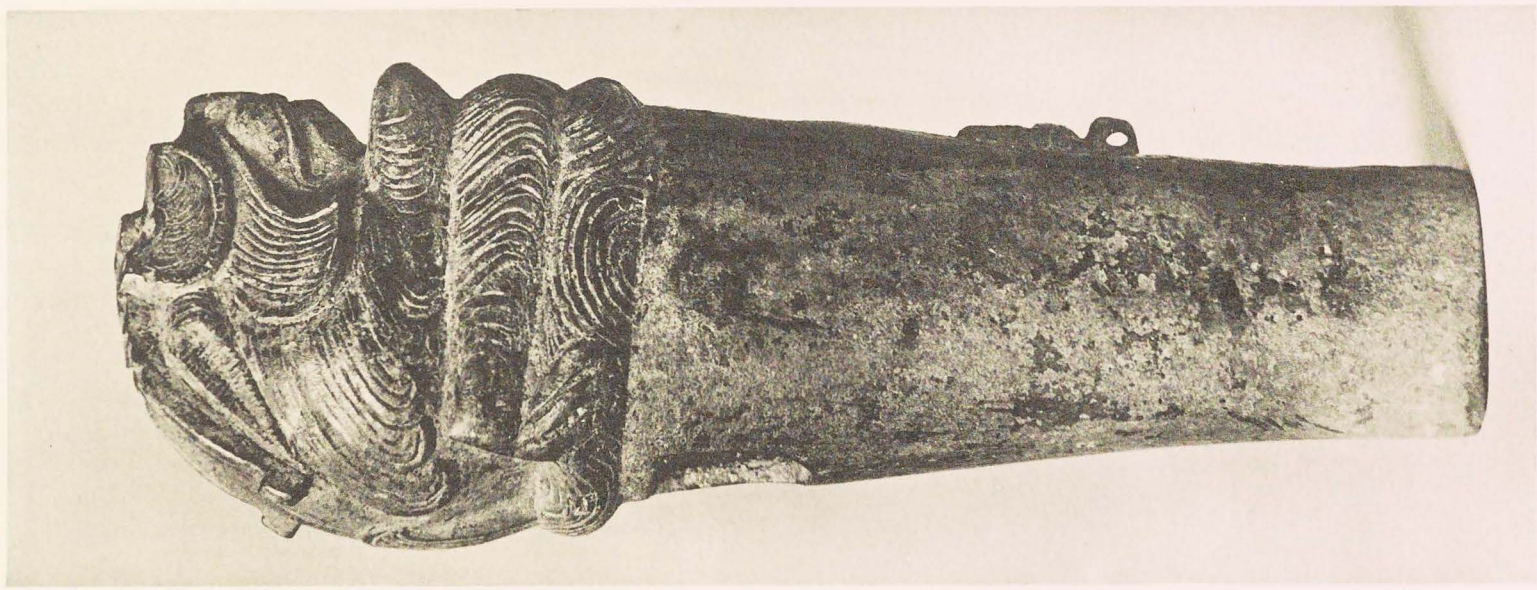


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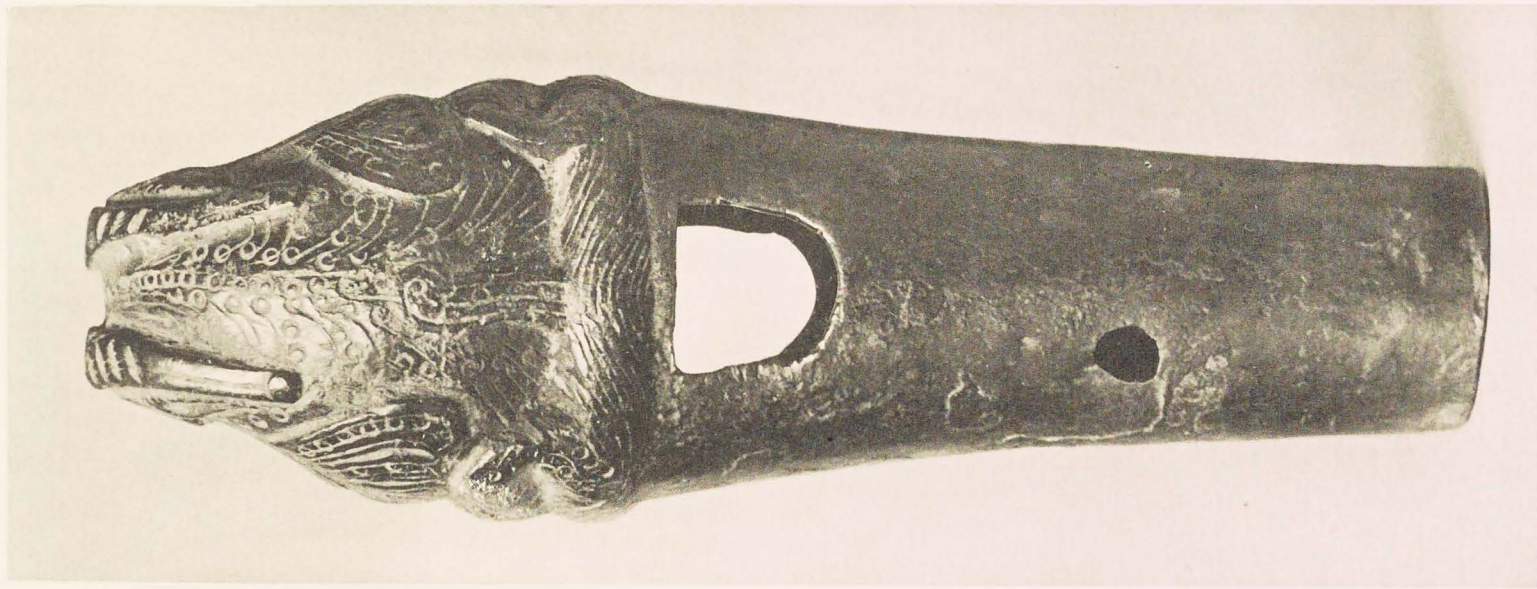
PLATE LXVII



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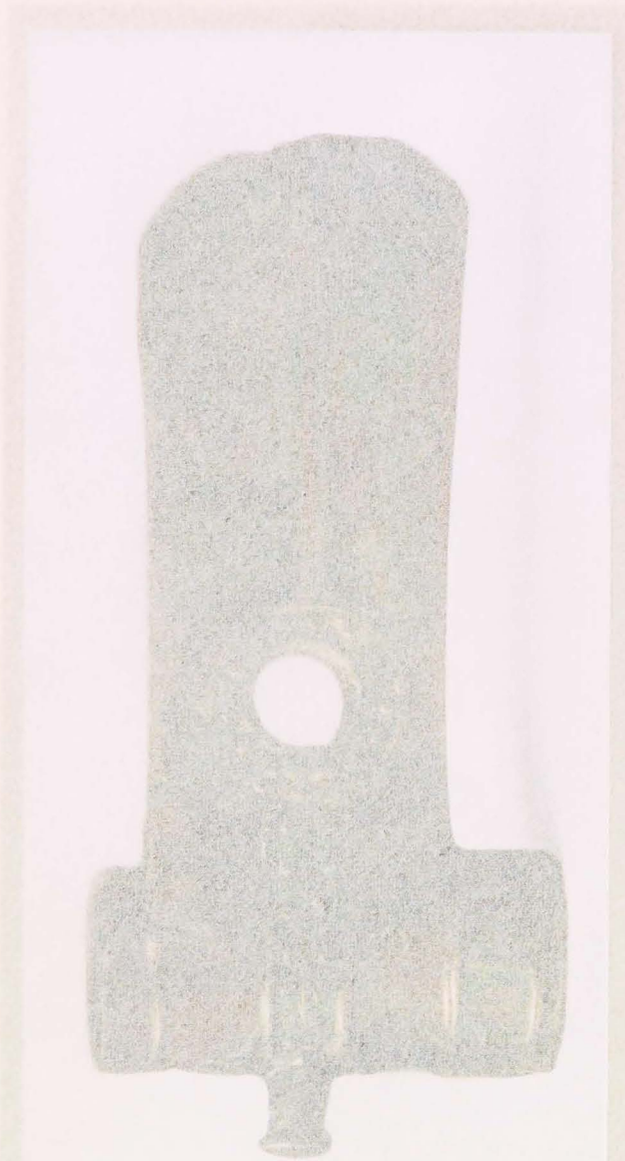


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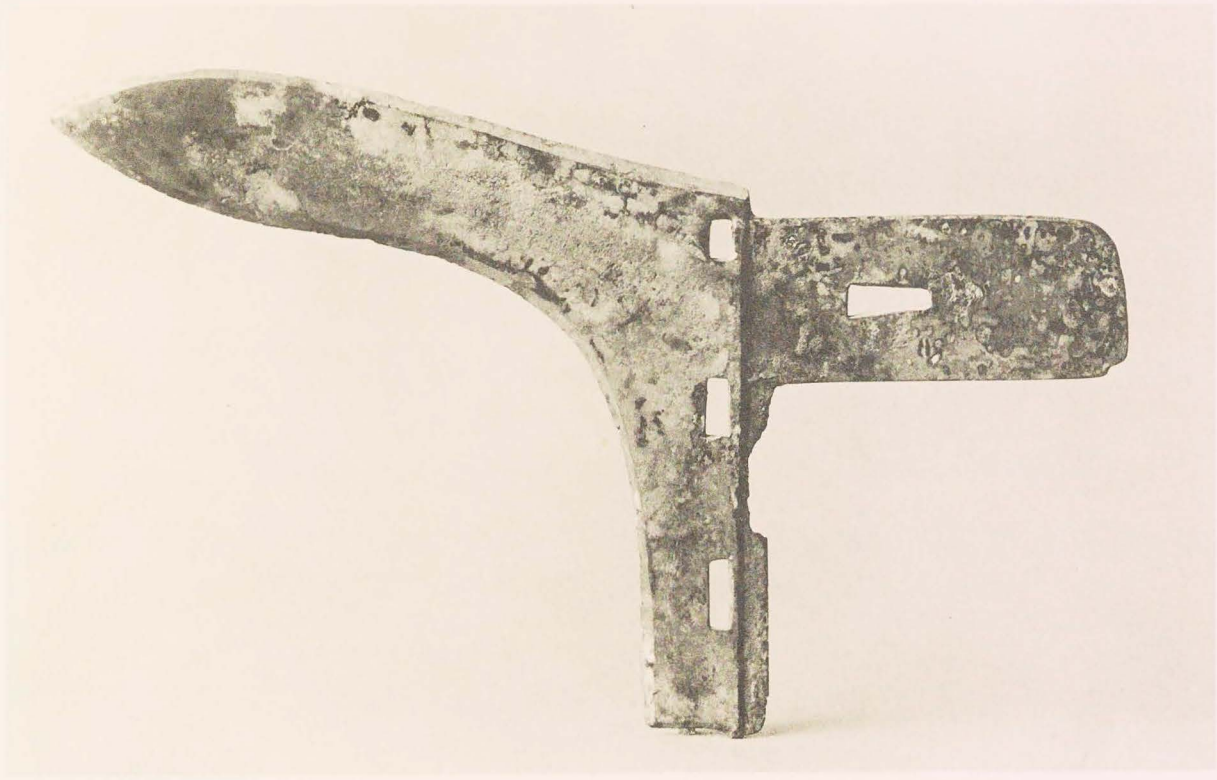




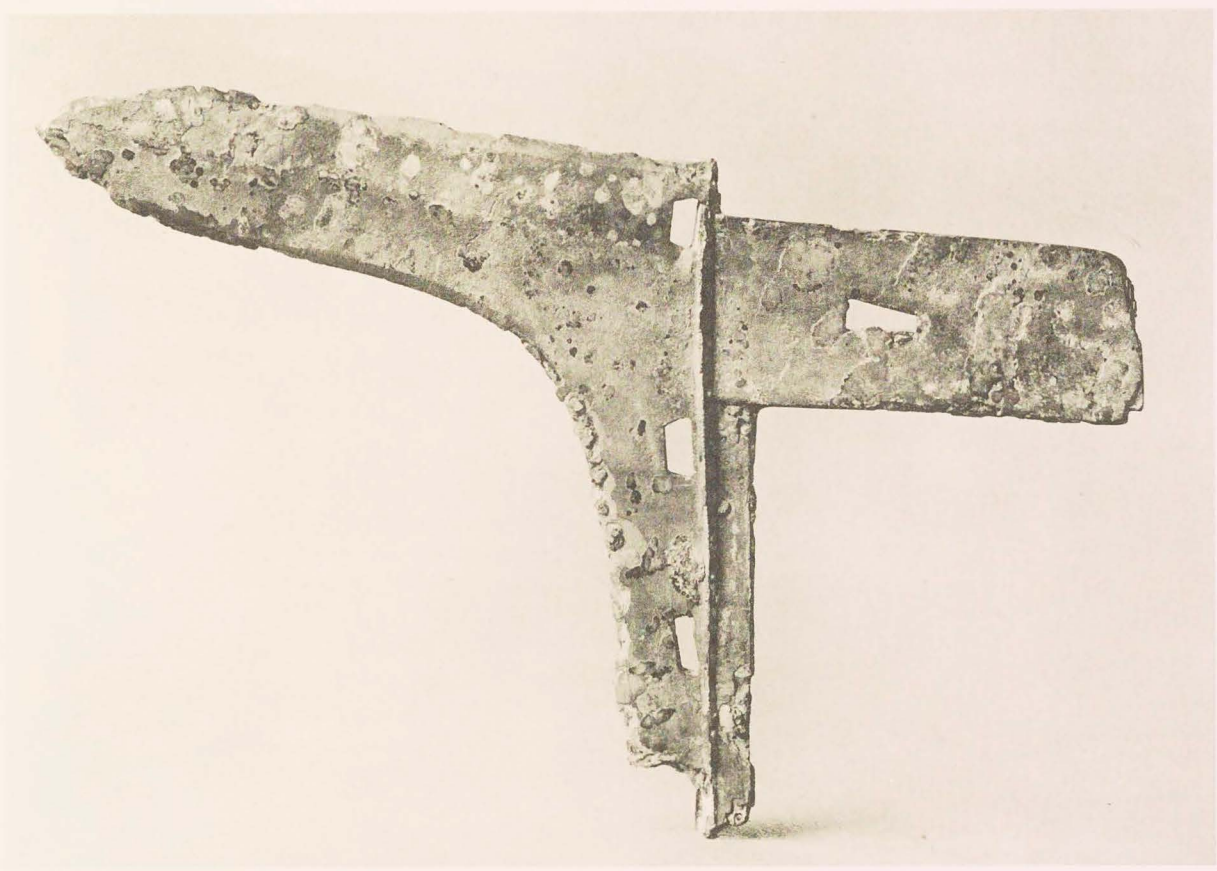




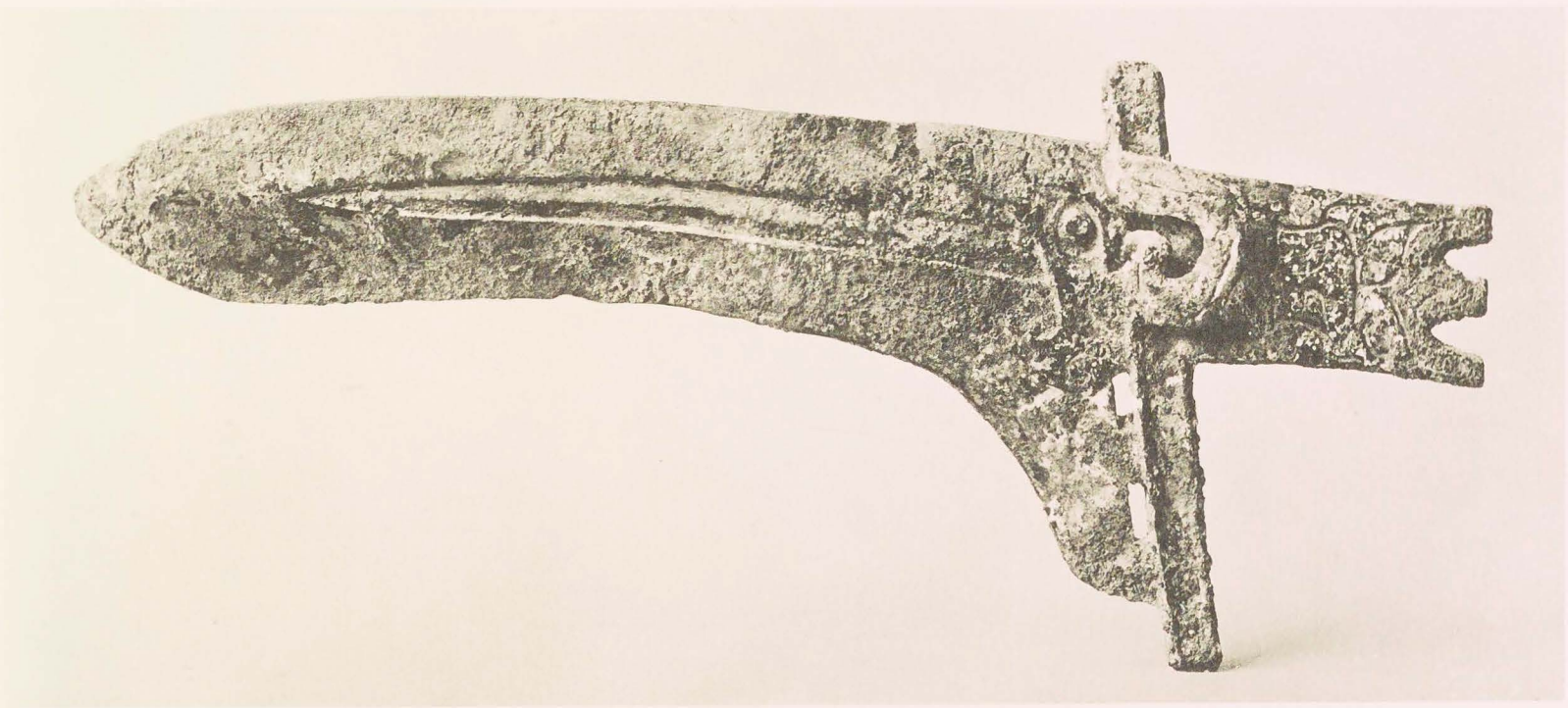




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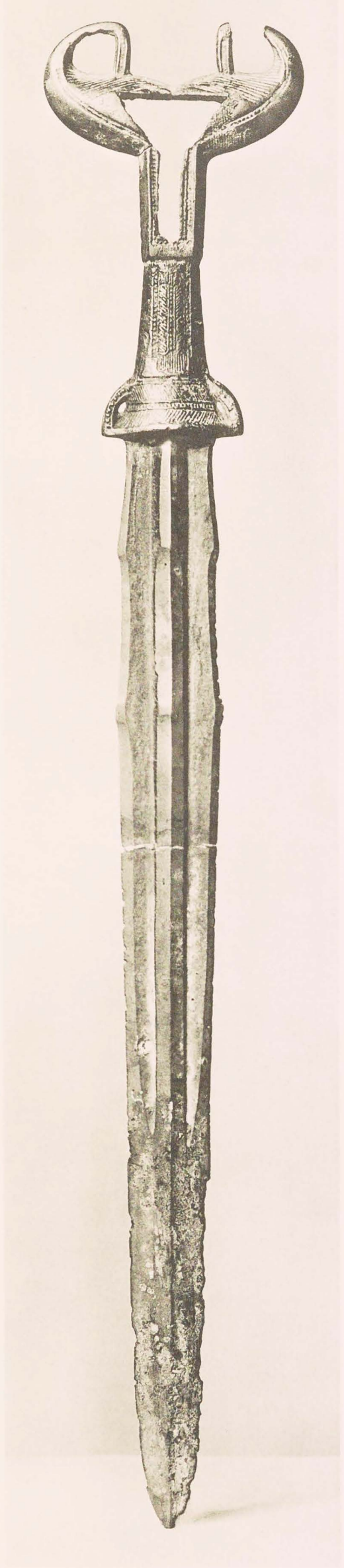
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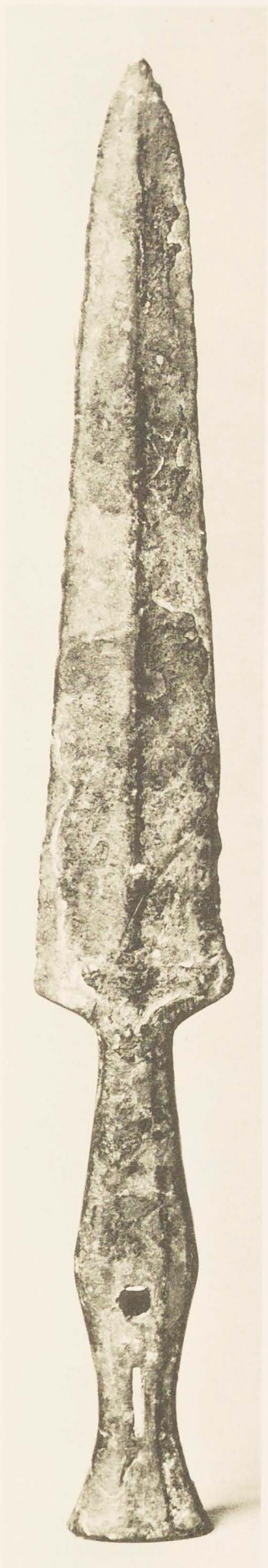


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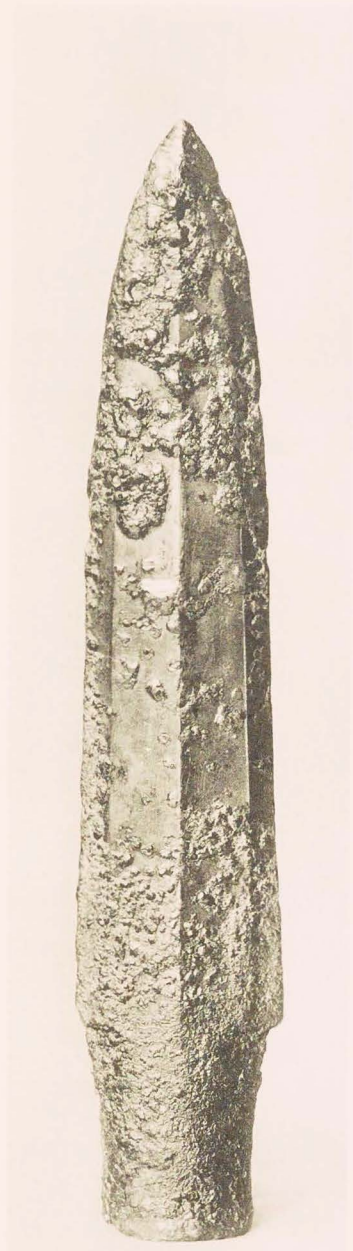
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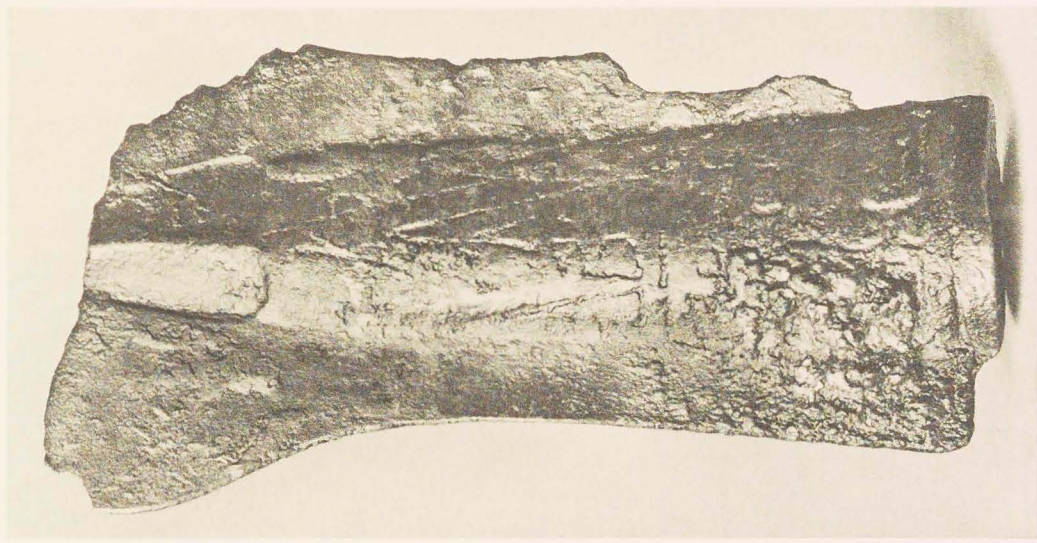
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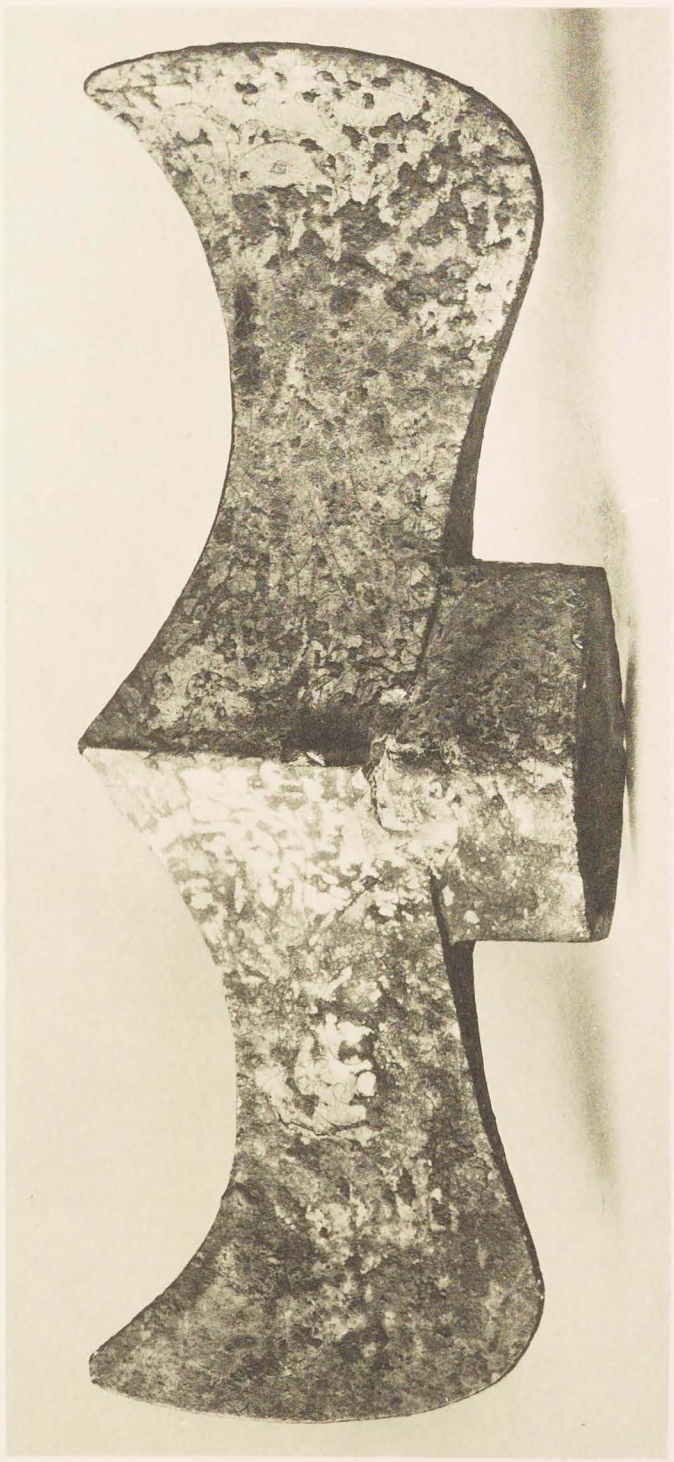
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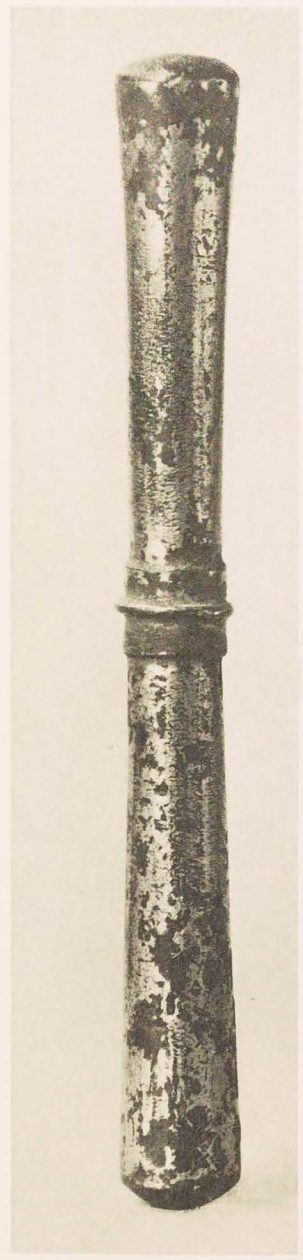
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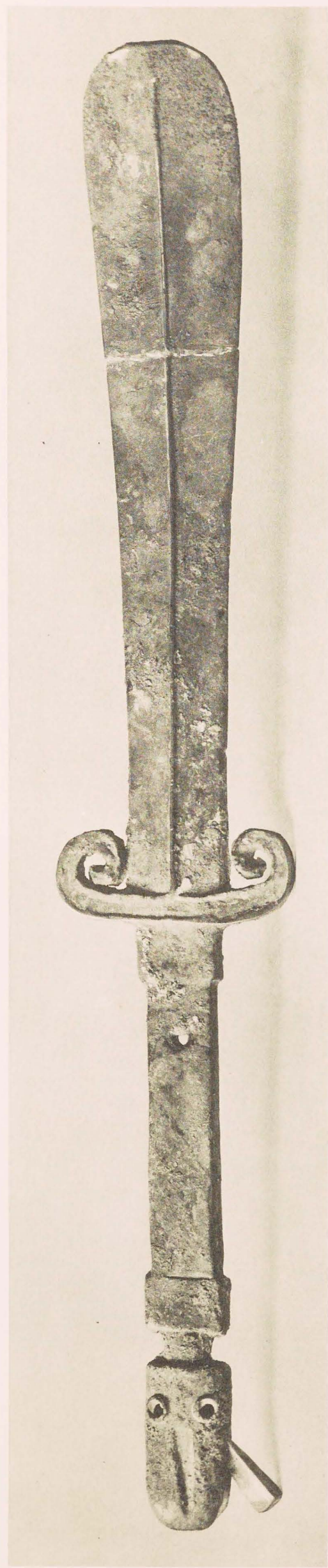
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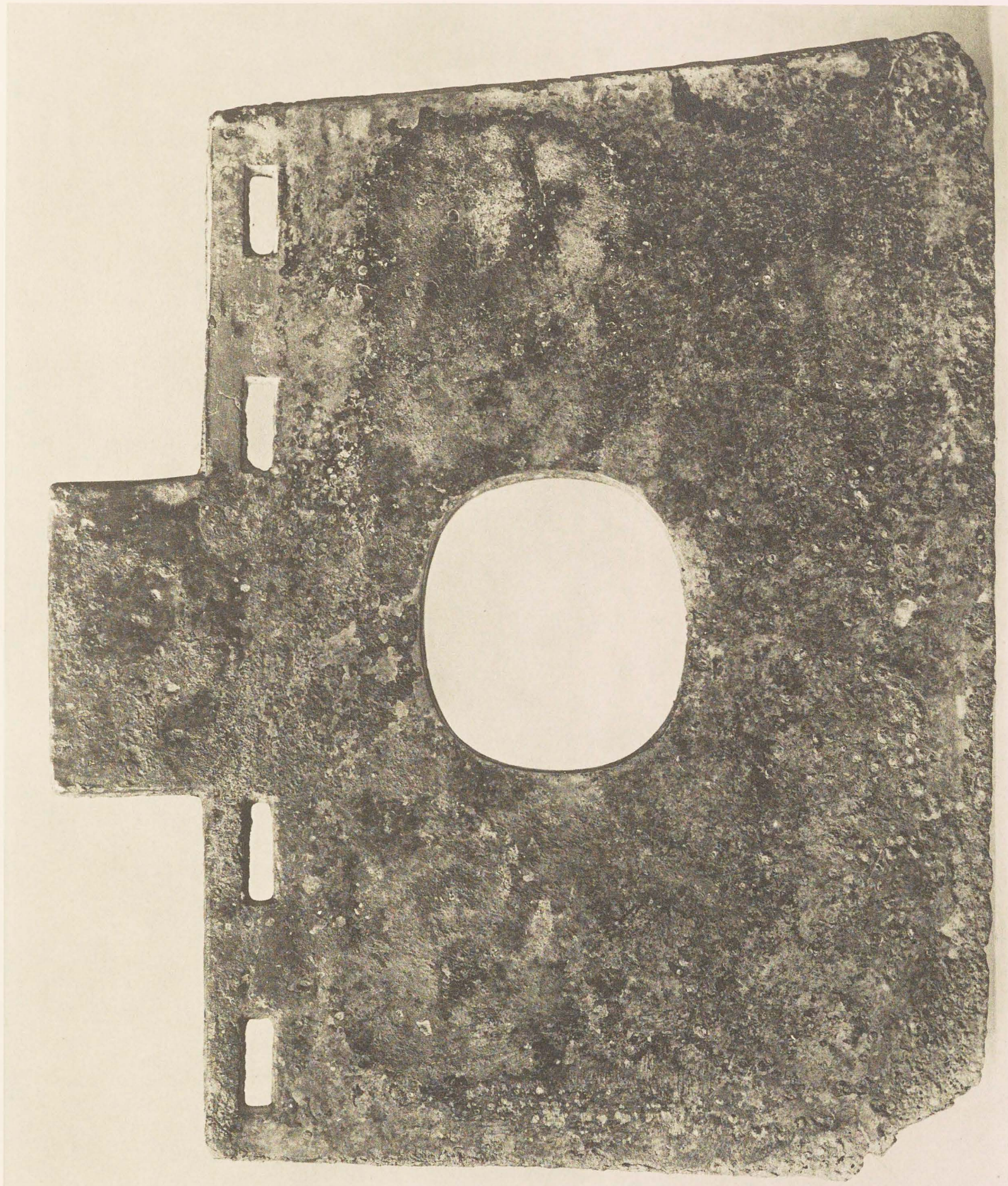
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